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DEVOTED TO PHOTOGRAPHY IN ITS
WIDEST SENSE

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AMERICAN JOURNAL OF PHOTOGRAPHY.

MAY, 1895.



BEACH HAVEN, N. J.

NEGATIVE BY R. F. ENGLE

SEED PLATE, GUNDLACH LENS F. 41.

SLOW INSTANTANEOUS SHUTTER.

AMERICAN JOURNAL OF PHOTOGRAPHY

THOS. H. McCOLLIN, Managing Editor.

JULIUS F. SACHSE, Editor.

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THE PHOTO-ELECTRO-ARTOGRAPH.

AS far back as January, 1892, we noticed in the AMERICAN JOURNAL OF PHOTOGRAPHY the photo-electro-artograph, an invention of Mr. N. S. Amstutz, a mechanical and electrical engineer of Cleveland, Ohio; also giving an illustration of the crude results obtained up to that time. This was followed in our March number (1892, page 118) with an exhaustive description of the method for transmitting pictures over long distances by electricity, and in which the photographic processes take an important and fundamental part.

Since this time strenuous efforts have been made, with every prospect of success, to perfect the invention so as to make it practical and available for commercial purposes.

Within the past few months renewed attention has been given to the process, and it was brought permanently before the general public by copious illustrations in the *Scientific American* and *Electricity*. These cuts, crude as they were, illustrated the progress that had been made thus far.

It is now claimed by the inventor that this process is capable of being adapted to the following uses:

1. Engraving photographs or half-tone designs, outside of conventional geometric work, etc., upon silverware.
2. Relief block engraving and embossing for printing purposes, such as catalogues, magazines, etc.

3. Intaglio plate-engraving for printing, being analogous to steel-plate work.
4. Carving upon wood blocks for relief photographs; a blunted cutter would be used, so that the contiguous cuts would overlap each other, and thus interpret the design into a variable relief surface. This can be used either as an intaglio or as a bas-relief.
5. Metal die cutting from photographs to reproduce designs for stamping ornamental sheeting, for ceiling decorations, or for ornamental dies used in forging carriage hardware.
6. Relief ceramic decoration.
7. Stone carving, by working from hand-prepared patterns, varying a relief photograph, excepting that the relief would be much greater.
8. Glassware decorations.
9. Reproducing art works on celluloid, each engraving being a finished article.
10. Engraving original designs in photographs or half-tone sketches, on celluloid for catalogue covers, etc.
11. Engraving from photographs directly for local daily newspaper work.
12. Portrait reproductions on celluloid in lieu of ordinary cabinet photographs.
13. Newspaper photo-telegraphy.
14. Municipal detective photo-telegraphy.

This list, Mr. Amstutz continues, is not a complete one, but is designed to show somewhat roughly the possibility of the invention. A number of additional phases could be suggested, but roughly blocked out, these are believed to be quite ample for a time at least.

As a matter of fact this new process, wonderful and important as it is, is nothing more or less than a successful application of electricity as a motive power and transmitter to the medal ruling and engraving process, invented over sixty years ago by Joseph Saxton, of Philadelphia, a member of the American Philosophical Society, and by which the first practical photo-mechanical printing plate was made in 1841, and which we reproduced in the *AMERICAN JOURNAL OF PHOTOGRAPHY*, October, 1892.

It is also an interesting coincidence that what Mr. Amstutz is striving to accomplish was the aim of Baron Egloffstein back in the 60's, and whose experiments formed the basis, and eventually resulted in the development, of the beautiful half-tone process of the present day.

J. F. S.

A QUESTION OF THE DAY.*

THE time has long since passed, in which the public was wont to crowd into the studio of the photographer, and forced to curry the favor of so exalted a person as the sun artist, before they might obtain the coveted "sitting."

At the present day, the photographic art is in much the same condition as any other trade, and he that fails to advertise, or does not know how to do it, or, worse yet, consoles himself with the idea that he who stoops to advertise his business lowers himself to a plane unworthy to be classed as an artist,—all of the above sooner or later learn to bewail their lot.

Before entering further into this subject, the question may be asked, What is a suitable method of advertising for the photographic artist?

Is the procedure of our American competitors worthy of imitation, by which they frequently strive to allure the public by subtly-planned and often questionable "tricks." For instance, a photographer advertises to take the picture of any or all persons over seventy years of age, and who reside in his town or city. Here the artist naturally looks to the future to repay him for his outlay.

Or in another instance, where the artist induces some prominent personage to solicit trade for him, for which he receives a percentage, and then there is the still more questionable method of having in connection with his gallery a room where liquid refreshment is dispensed to callers and patrons.

Then there is the bonus crayon scheme, and it is not to be de-

* A free translation, from the German, after Dr. Miethe, in the *Atelier des Photographen*, by Julius F. Sachse,

nied that this scheme has injured the business of many reputable photographers, as it has tended to lower the whole photographic guild in the eyes of the respectable community, and under which they are still suffering.

Next in order we come to the usual method adopted to attract the general public, by means of advertisements in the daily papers. While this method is perfectly legitimate, it is yet frequently used to cover some carefully veiled manœuver, to enumerate but a portion of which would far exceed our space.

In the large cities and towns, the advertising columns of political and humorous papers and periodicals, together with the blank walls and traveling vans, have all been impressed into service, to herald the name and merits of some photographer, and set forth the low scale of prices to which they have fallen. We have yet to learn to what extent such advertising methods are successful in a pecuniary sense, and whether they justified the indirect damage done to legitimate photographic artists.

Although it is true that a photographic business advertisement is perfectly legitimate, it is equally true that the general public does not look for an advertisement from a first-class photographer any more than it does for a similar announcement from any reputable portrait painter, attorney-at-law or medical doctor.

In direct contrast to such artificial means for attracting patronage, whose advisability and results are yet an open question, we have a natural means to increase our business, that is, the *perfect satisfaction of our patrons*.

It is useless to answer that it but rarely lies within the power of an operator to satisfy his patrons, as by their ignorance or questionable taste, they are frequently led to reject the best artistic results for the more mediocre effects.

It is here that the photographer should always remember that his art and position is an educational one.

The satisfaction of the patron is naturally influenced by the picture we present to him, as well as by his own taste and preferences, and his verdict is usually based upon these conditions.

There are, however, still other conditions which tend to influence a verdict in favor of the operator.

As it is not the least aim of the physician to impress his patient with his personal appearance, and thereby evoke confidence, so it is with the photographic operator, whose aim it should be to excite his patrons' interest and sympathy.

This is not to be achieved by obsequious bows and stale compliments, but by treating the patron with true, manly courtesy; this generates in the latter a feeling of confidence and trust in the operator's ability and judgment.

Why every photographer has his own individual grade or class of clients, or why one should be patronized only by the higher or wealthier classes, while his neighbor, who is an artist of equal accomplishments, draws his clientele exclusively from the poorer classes of the community, is the great photographic conundrum, and is not to be answered by the mere statement that the efforts and results of the latter operator do not rise above a certain standpoint.

The true cause is rather to be found in the lack of tact and culture on the part of the operator. By this we are not to understand ordinary schooling or a deficiency in certain branches of knowledge or learning. But it is the lack of the good breeding and manners that cause a man to treat the humblest and plainest dressed person with the same courtesy and politeness that would be extended to wealthy ones. It is this peculiar trait that is apt to excite the sympathy between operator and client that generates confidence.

Any person who has passed a pleasant time while in the studio or during the sitting, and has been made to feel at his ease, is very apt to view the results submitted to him with less critical eyes than where brusqueness and incivility prevailed.

It makes the greatest difference with a prospective sitter if he or she is received with politeness by the reception girl, addressed pleasantly by the proprietor, and a little information is given now and then as to pose or effect by the operator. Then a request to wait a few minutes and inspect the negative will go a great way to please a customer who under ordinary circumstances would be extra critical and almost impossible to please.

Every customer treated with courtesy and politeness becomes an active solicitor for the artist, one that costs him nothing, and which, together with good, careful work, soon brings a paying clientele to the studio.

THE PREPARATION OF PHOTOGRAMS FOR HALF-TONE.

BY C. J. VINE.

THE proportion of photographs that reproduce well by half-tone process without any preliminary working-up is small; in fact, most all photographs reproduce the better for a little judicious touching up.

The retouching requires to be handled with care, and no one should attempt it who has not some artistic intuition. It is just one of those things which, unless done rightly and well, are best let alone; and if a process worker feels doubtful, he had better leave retouching, and trust to fine etching to do the best possible for his subject.

Of course these remarks apply rather to elaborate working-up than to the mere touching in of lights or darks; yet even in that there is need for the exercise of much discretion, as nothing is worse than a "spotty" picture, no matter whether the offending spots be black or white.

The materials necessary for the work are lamp black and Chinese white. A small proportion of Sepia may be added if the photograph inclines much to brown; but is best dispensed with, as brown invariably darkens in process of reproduction, and the advantage of the retouching is thereby modified. In addition to the black and white, some liquid ox gall is necessary. The gall imparts a grip to the color, even when applied as a thin wash, that it would not otherwise possess, and is used to mix and dilute the colors instead of water. Dark shadows, which have dried dead, may be brought out by covering with a weak solution of gum arabic—just sufficient to give depth without much glaze.

In regard to the artistic side of working-up, it is obviously a difficult matter to give hints upon, for mere carefulness and delicacy of handling will avail little if the worker has not an intuitive grasp of light and shadow, coupled with an eye for symmetry.

However, let the photogram be first cursorily glanced at, and anything that strikes the eye as over-prominent, or dark, or confused, be carefully borne in mind. Then examine your subject more narrowly, especially those points that appeared obtrusive at sight. Thus any defects, if they be such, because intensified by close examination, and grow more or less obnoxious or painful. On the other hand, if the defect be slight, careful scrutiny rids the eye of its first unpleasant impression, and it may be necessary to retouch it but little, if at all; though if, when laid aside for awhile and again taken up, a particular portion should again assert itself as a defect, it is better to modify or touch up the part.

Much depends upon a skilful use and arrangement of lights. As a simple broad rule, the worker may leave the middle distance alone, heighten the sky lights, and lighten the far distance to harmonize, and darken the more prominent shadows in the foreground. It may happen that the foreground is already too strong, in which case it must be lightened out. Do not, however, lighten a dark foreground by a net-work of strong white lines; a foreground thus treated is unnatural, and harsh, and spotty, and is not in harmony with the rest of the drawing. Avoid anything approaching patchiness, and render the gradation from light to dark easily and naturally throughout; for, although staring white lights and coarse hard lines tone down much in process of reproduction, the spots remain. Also remember that a well-balanced, pleasing drawing is every whit as desirable as one that will reproduce well, and that a drawing lacking in symmetry cannot please, no matter what its technical merit.

It is proverbially dangerous to trespass, yet it were impossible to withhold a few comments upon the printing. The chief complaint of the artist in regard to half-tone work—from wash drawings as well as photograms—is its lack of boldness, and although this flatness or ineffectiveness is characteristic of half-tone, it is too often accentuated by not over-careful printing.

With the majority of printers either insufficient time is allowed the machinist in which to "make ready," or his idea of block printing consists of obtaining simply an *even* print of the whole surface, by slamming layer upon layer of "packing" behind the block. But the artistic machinist, by adding impression upon platen or cylinder, by proper use of "packing" papers of varying thickness—thick to strengthen the solids, thin to lighten the paler tones—will enhance the artistic value of the most delicate and most perfect half-tone block.

Few general printers recognize the supreme importance of the "making ready," and it is unfortunately true that customers are often all too unwilling to pay the cost of the extra time—an absolutely necessity.

The fine grain of the block also needs a better ink than in ordinary use, and an occasional brush over is desirable. Both of these things receive only too little attention.—*The Photogram.*

CHEMICAL NOTATION.*

CHEMICAL notation is the recording, by means of symbols, the chemical changes, or the re-solution of compounds; in short, it is the symbolizing of chemical facts.

We have already employed the first capital letter of the Latin or Greek names of the elements as short-hand for the whole name. Thus for hydrogen or oxygen, we simply write H and O. This is not the only function of the symbol (to represent the name of the element): it means, furthermore, one atom of the element, and third, one volume of the element in the gaseous condition. A fourth office is to represent a constant combining weight, *i. e.*, the atomic weight of the element for which it stands.

Figures are used to modify some of these functions. Large figures placed before a symbol multiply the atoms, and therefore also the atomic weights and the volumes in gaseous condition. Thus, 2H means two atoms of hydrogen, two volumes, and

*An extract from "An Elementary Course in Inorganic Pharmaceutical and Medical Chemistry, by Prof. Frederick J. Willing, 1894. John Wiley & Sons, New York.

twice the atomic weight also. A small figure written to the right of the symbol, below, has the same significance, thus H, is the same as 2H. A figure preceding multiplies all the symbols that follow, as 3HCl means three of hydrogen and three of chlorine; but a small figure at the lower right of a symbol multiplies only the symbol to which it is attached.

It would really be incorrect to write 2H, as we would thereby mean two atoms of hydrogen uncombined, which can not thus exist; atoms even of one kind will combine to form molecules, two atoms usually forming one molecule, which molecule, in the case of hydrogen or oxygen, would be expressed H₂ or O₂. The third function of a symbol, that of representing one volume of the element in the state of gas, will perhaps not be so easily understood by the student. By referring to the fourth function, representing the atomic weight, he may the better understand it. In learning the atomic weights, the student was informed that they were obtained by weighing equal volumes of the elements under like conditions of pressure, etc., after they had been caused to enter the gaseous condition, and that the number expressing the number of times the volume of any one gas was heavier than an equal volume of hydrogen, the standard, expressed the atomic weight of that element, for equal volumes of gases in the case of elementary bodies contain equal numbers of molecules; and because these, the molecules, contain two atoms, the volumes must contain equal numbers of atoms. The extension or bulk of the volume is arbitrary, so long as it is equal to that with which it is compared.

The position of symbols, too, has some significance. H₂O means not only two atoms of hydrogen and one of oxygen, etc., but also that the H and O are united by chemical force, and in the proportion expressed by the figures 2 and 1 respectively. (1 is always understood, and therefore never written.) Written 2H₂ + O₂, it would indicate a mere mechanical mixture of two molecules of hydrogen and one molecule of oxygen, but placed closely together it is understood that they represent the compound resulting when hydrogen and oxygen unite chemically.

An atom is represented by a single symbol, but a molecule, which consists of not less than two atoms, is represented by as many symbols as it has kinds of atoms in its composition, and the collection of symbols representing the composition of a molecule is called its formula.

The formula for a molecule of an element has only a single symbol, representing the kind of atoms, together with the small figure at the lower right side denoting the number of atoms; thus H_2 , O_2 , Cl_2 , denote molecules of hydrogen, oxygen and chlorine, respectively. The molecules of some elements have more than two atoms; phosphorus, P, is believed to have four.

The formula for the molecule of a compound must have not less than two kinds of atoms. Calcium carbonate, common chalk, contains calcium, carbon and oxygen, and its formula is $Ca C O_3$, that is, one atom of calcium, one of carbon, and three of oxygen, and these elements are united in the proportions (definite proportions) expressed by their atomic weights. The formula for the molecule of water is H_2O , for hydrochloric acid $H C I$. The latter may be made by including chemical union between the constituent elements. This union may be thus recorded: $H_2 + Cl_2 = 2HCl$, and such a series of formulae is called an equation. An equation is, therefore, the illustration by means of symbols of the chemical union or resolution of atoms or molecules.

We say chemical resolution, for it is just as possible to resolve a compound into its constituent elements as it is to cause elements to unite. $2HCl = H_2 + Cl_2$ would be an equation illustrating chemical resolution. In all equations the kinds and numbers of atoms to the left of the sign of equality must always equal those to the right of it.

It may be appropriately mentioned here that chemical resolution is also termed analysis, and chemical union synthesis. Analysis and synthesis have usually given to them a broader significance. Analysis does not necessarily mean alone to break up compound substances into their elements; it means also that a complex combination may be broken up into two or more simpler ones. Chemical processes and methods by which we

recognize an element, or a group of elements, are termed chemical analyses, whereas chemical synthesis is the putting together, by means of chemical force, elements to form compounds, or uniting simpler compounds to form more complex ones.

By treating mercuric oxide, HgO , the two elements become dissociated. The analysis may be thus expressed $2HgO =$ heat = H_2 + O_2 . This is one form of analysis; another may be illustrated by heating calcium carbonate: $CaCO_3 +$ heat = $CaO + CO_2$. In the former the product of the analysis is the elements; in the latter, compounds which are simpler than the one they made up.

A simple form of synthesis is illustrated by bringing iodine and iron in contact for some time—iodine of iron is formed according to this equation: $Fe_2 + 2I_2 = 2FeI_3$. Another form of synthesis in which simple compounds are employed may be symbolized in this equation. $SO_3 + H_2O = H_2SO_4$.

The sulphur dioxide unites with the hydrogen oxide, water, to form sulphurous acid.

Much more, for which the student is not yet ready, will be said about chemical notation and nomenclature as the student advances.

The functions of symbols, formulæ and equations may be briefly summarized:

A symbol is: (1) short-hand for the same name of the element which it represents; (2) it represents one atom of that element; (3) one volume of that element in the gaseous condition; (4) it means a definite chemical proportion of atomic weight.

A formula gives (1) the names of the elements in the molecule; (2) the number of atoms in the molecule; (3) the molecular weight or sum of the atomic weights; (4) it represents two volumes of the substance in state of gas, and (5) denotes that the atoms in the molecule are united by chemical force.

The function of an equation is to express by symbols the changes that take place among atoms and molecules in analysis or synthesis.

A SEASONABLE TALK.

J. FOCUS SNAPPSCHOTTE.

AS the tourist season is once more approaching, and some of our readers are perhaps contemplating a trip abroad, a few practical hints, proven by actual experience, will not be amiss; particularly to such knights of the camera as have never before ventured beyond the seas.

The first question naturally arises as to the out-fit, materials and plates. Coupled with this is the thought as to how one fares at the custom *vizas* at the different boundaries.

Then comes the question as to the opportunities one has in the different countries for taking views or snapshots, and the local facilities afforded for changing plates, development, fixing, etc., and for obtaining proofs if necessary.

As to the first question: to be absolutely equipped for all emergencies it is best to take both a view camera with tripod, and a hand camera. The former should be fitted in a carrying case made to hold the camera, and say three holders. The tripod should be a folding one in three sections, loose from the crown head, so that the legs will lay flat on the bottom of an ordinary steamer trunk. A few extra plate holders will prove of advantage: these can be laid among the clothing in the trunk and will carry safely even when loaded. The outfit in this shape is always ready for use, and is light and handy. The tripod can be put together before starting out.

Another good plan, one pursued by the writer, is to make a hole in the side of the carrying case, on line with the screw socket in the camera, thus allowing the tripod head to be screwed against the case on the outside, which also kept the camera firm in place, while the three folded legs were held by an ordinary shawl strap. Thus the outfit was always ready and compact, to place over head or under a seat, and good for six exposures. Where more plate holders are needed, it is an easy matter to carry them in an ordinary Gladstone grip, such as every tourist is apt to carry.

Another practical hint, for such as have fine lenses, is to have

two snug-fitting brass caps made to cover both front and back combinations ; they cost but little and remove all danger of damage to the objective.

The hand camera, for either films or glass, will prove invaluable for snapshots at everyday life and scenes, such as could not be caught with a regular view camera.

As to photographic material and plates, the safest rule is to confine yourself to such makes of plates as you have had the best results with at home.

There are no better plates made in the world than our standard American dry plates. Further they will not deteriorate by an ocean voyage unless through rank carelessness. The writer has carried loaded holders in his trunk, that was opened daily through the ocean voyage, without harming them in the least. Our illustration of a German street scene was made on one of these identical plates.

Still it is always best to be careful, and especially guard against any possible dampness.

There is no necessity for carrying any trays or chemicals, as there are photo stock houses, or clubs, in almost every town, where a dark room is at the disposal of the tourist, and developers and fixing baths can be had at a trifling cost, and the attendant will attend to the final washing and drying. If the tourist prefers to work with his own developer, the best plan is to take a box or two of the compressed tabloids, or cartridges, such as are furnished by Carbutt or Gennert ; they are always ready, cleanly and reliable.

The course pursued by the writer was, after the day's work was done, to go to the dark room, and tell the attendant how many plates he wished to develop, and what kind of developer they could furnish.

If the developer was one of their own composition, that they were backward in explaining, I would, after diluting the mixture, try one plate first. If this was all right, it was safe to go ahead. After they were fixed the attendant was always found willing to undertake the washing.

On the next morning the negatives were ready for delivery.

Another precaution taken, was to have a print made from each negative, which was sent a day or two afterwards by mail ; the negatives, however, were always taken and packed in a plate box, and rolled up in a garment in the trunk. In this way not a single negative was broken, notwithstanding the rough usage the trunk received.

In case the tourist runs short of plates, he can obtain in any of the larger towns or cities, at a day or two notice, good plates cut to his size. Should such a dilemma arise, it is best to depend upon the judgment of any first-class local dealer, tell him what kind of work you want to do, and rely upon his judgment. There are a number of makers of excellent dry plates, in both England and Germany.

Now as to the custom-house *visa*, there are three things that the officials in Europe are on the alert for, viz.: tobacco, liquor and tea. No difficulty whatever was experienced at any border when declaration was made that none of the proscribed commodities were in the baggage. When the outfit attracted attention the simple words, *Amateur photograph*, were all that were requisite.

The question as to opportunities for photographic work in Europe, may be answered thus : Photography in Europe (except France), so long as confined within legal bounds, is as free and unrestricted as in America.

The term "legal bounds" is used, as there are certain restrictions within the bounds of military reservations, wherein no camera is permitted under penalty of imprisonment.

It may seem strange to many of our readers that the same rule prevails in our own country, as the writer found out some months ago, wishing to photograph the ruin of the sally-port at Fort Mifflin on the Delaware. He was advised not to attempt it without permission. A formal application to Hon. Daniel Lamont, Secretary of War, brought forth a refusal, couched upon the articles of war, and the attendant penalties if the crime was attempted. This was the more ridiculous as the whole garrison of the Fort consists of a sergeant who lives outside of the old ruin.

Abroad it is always best to give all military posts and fortifications a wide berth, not going into them even with a hand

camera. Still the portier of any hotel can usually give all requisite information. If, however, anyone happens to get on forbidden ground, he will not have long to wait before set aright.

In seeking food for the camera, it is best to keep a little off the usual line, or beaten track, of tourist travel.

The illustration to this article is "A Street Scene in Nordheim," an old Hanoverian town, which dates back to the tenth century. It is the usual starting-point for travelers intending to explore the Harz Mountains. The old houses with curious wood-carving shown in our picture date back to the sixteenth century.

The Church of St. Sixti within the town, built in 1519, and which contains, in addition to the fine old carving on the altar, some fine stained glass in the choir, from a previous church-building, bears the date of 1404. Remnants of the old walls with their towers and bastions built in 1246, together with numerous picturesque vistas, prominent among which is the old "God's Acre" of St. Blasii, with its moss-covered monuments and fine shade trees, just without the old wall, all offer advantages for artistic views out of the general run of tourist work. Our illustration of a quaint street scene is but one of hundreds, to be found along the various railway lines on the continent.

There is another advantage in striking such picturesque, out-of-the-way and neglected spots, the expenses are generally much lower than are asked for similar accommodations at places that are on the tourist circuit. To many this is an object.

The greatest drawback, however, to European travel is the everlasting tipping of servants and the charging of *extras*, such as bougies (candles), attendance and similar necessities in your bill, when you are all ready to leave, and perhaps have just a few minutes to spare over train time. It is then that these petty extortions are paid rather than perhaps lose a day. Worse than all, after the extortionate bill is paid, you find that all the servants are yet to be paid, *Ober-Kellner*, who has just receipted your bill, the table waiter, chambermaid, baggage porter, boots, and, last of all the stately portier, all expect their "Backsheesh" after your legitimate bill has been paid. It is here that European civilization seems to be lowering itself to the level of the semi-barbar-

ism of the Levant. The plan best to pursue, and one which never fails to obviate the petty annoyance, is, upon entering a hotel, to ask to see their room, then inquire price per day, everything, such as light and attendance, included. If the *Kellner* answers that he cannot tell just what it will cost, the threat to go elsewhere will at once refresh his memory. Where an extended stay is contemplated, the tourist should demand a bill at the expiration of every twenty-four hours. The latter is the rule with many of the larger first-class hostellries in Germany, and obviates all disputes at the last moment, a condition which adds much to the pleasure of the trip.

Calculating Easter's Coming.—More than usual is the importance devolving upon the moon for April, says the *New York Times*. Upon it depends the fixing of the date for Easter Sunday, and according to laymen, it is decided in this way: The vernal equinox happened on March 20, when the sun came across the equator and entered the sign of Aries. The first full moon after this event is on April 9, and the Sunday following the full disk is April 14, or Easter Sunday. The reason why there is sometimes a difference between the day on which Easter falls, as determined by the above rule, and that used in church calendars, is on account of the introduction in the latter of what they call the "calendar moon." This is not the actual moon, nor even the mean moon of astronomers, but it is an altogether imaginary moon, created for ecclesiastical convenience in advance of the real moon; and the fourteenth day of the "calendar moon," or the day of the full, falls sometimes on the fifteenth or sixteenth of the real full moon. The earliest possible day for Easter is March 22, and the latest April 25. The word Easter is supposed to be derived from Eostre, the Anglo-Saxon goddess of spring, to whom the month now called April was dedicated.

"It is always best to be earnest," said the man who loves to lecture. "If you do anything, do it in italics." "Yes," replied the youth, "I have several times seen a man fail because he went into business with a small capital."



AMERICAN JOURNAL OF PHOTOGRAPHY.

MAY, 1895.



A STREET SCENE IN NORDHEIM, GERMANY.
NEGATIVE BY JULIUS F. SACHSE. JULY, 1894.

UNEVEN TONING.

UNEVEN TONING.

A SET of albumenized paper prints we referred to before¹ as "Puzzled" in our correspondence, contains, form an excellent sample of the vagaries that foreshadowed albumenized paper prints. We are in no way decrying the use of this printing process, for we hold the opinion that a good print from a good negative made on this printing medium, is difficult to surpass. One of the new papers by which the market is now flooded, at the same time, we have little but praise for the large and numerous prints, and the most uniformly excellent work we have seen has been done by those who have learnt the capabilities of the paper, and adopted one or the other as older negative workers who have adapted their new negative to the paper. The printer may rest assured that if tritopreference, or three-point contrast as characteristics of their more off-the-shelf work in high glass being purely a secondary desideratum, then adaptation at all describe is the true secret of success.

The great advantage of the gelatine papers is that they are less liable to irregular results referred to in the letter we mentioned. With the mechanical means now at command it is possible, granting the emulsion is of good quality, to use a large quantity of paper, so that every sheet shall have its own characteristics and behave in a similar manner under like circumstances. True, it renders the printing function easier to the non-expert, a qualification which he however is apt to somewhat resent in multiplying the number of prints, and would otherwise give them. But this is only, really, for a good photograph is after all a matter of chance. "You press the button, we do the rest," does not indicate the highest average of pictures.

Following upon a continual demand for that very old favorite, the "good print," it will be well to see whether some of the causes of possessives may not be corrected. The prints sent us are, indeed, "mixed"—some very good, others not so good. The causes appear to be twofold—uneven bri-

MENJAKI JURNALISTIK PHOTOGRAPHY



UNEVEN TONING.

A SET of albumenised paper prints as referred to by "Puzzled" in our correspondence columns, form an excellent example of the vagaries that home-sensitised albumenised paper is liable to. We are in no way decrying the use of this printing medium, for we hold the opinion that a good print from a good negative, made on this printing medium, is difficult to surpass by any of the new papers by which the market is now flooded. At the same time we have little but praise for the latter; each is good in its place, and the most uniformly excellent work we have seen has been done by those who have learnt the capabilities of each paper, and adopted one or the other as older negatives required, or else have adapted their new negatives to the paper.

Our readers may rest assured that if transparency, softness, and sufficient contrast as characteristics of their work on glossy paper be aimed at, high glaze being purely a secondary desideratum, such due adaptation as we describe is the true secret of success. The great advantage of the gelatine papers is that they are not liable to the irregular results referred to in the letter of our correspondent. With the mechanical means now at command, it is possible, granting the emulsion is of good quality, to coat a very large quantity of paper, so that every sheet shall possess the same characteristics, and behave in a similar manner under similar circumstances. True, it renders the printing far simpler and easier to the non-expert, a qualification which the older hands are apt somewhat to resent in nullifying the advantage their trained skill would otherwise give them. But this is an advantage really, for a good photograph is, after all, a matter of brains; "you press the button, we do the rest," does not anticipate the highest average of pictures.

Granting, then, a continual demand for that very old favourite, albumenised paper, it will be well to see whether some of the irregularities it possesses may not be corrected. The prints sent for inspection are, indeed, "mixed"—some very good, others just as poor. The causes appear to be twofold—uneven bril-

liancy of surface and uneven floating on the silver bath; but these two hang together. Given two papers, one with a thicker coating of albumen than the other, the prints they will give are bound to be uneven if each sheet of paper has the same time of flotation. The more glossy the paper, the longer the time needed for the silver solution to penetrate its texture. This is one of the difficulties of the material. The condition of the albumen may vary, as also the state of the atmosphere as regards suspended moisture, the temperature, and the thickness of the paper; and all these cases combined, or any one singly, will cause a film of albumen to vary as regards its thickness or its glossiness. Further, each variation will cause corresponding differences in the character of the resulting prints.

It will thus be seen that considerable judgment will be required in the printer when sensitising his paper. It is the custom of some to go through a whole ream when opened, and examine each sheet, dividing them into two or three batches, each of as uniform a surface as possible. They can then, without further trouble, float their paper to a uniform time, taking care to agitate the bath after each sheet is withdrawn. The proper time once arrived at by experiment, the printer is sure of his sheets all toning alike—that is to say, from any particular negative, as is the case under discussion. No process will give equal results from every type of negative. Some of the prints therefore (we have amongst them really good ones to prove what the negative is capable of) clearly show imperfect or insufficient sensitising. The cause is obvious, taking for granted the correctness of our correspondent's statement that all the paper was floated for the same length of time. These bad prints are on exceptionally brilliant paper—paper that *a priori* ought to give the best prints; but, owing to their extremely repellent surface and thick coating, they have not had the whole of the alkaline chloride converted, with the result of grey tones, flat pictures, want of contrast, and depth in the shadows. The remedy is simple. Let the prints remain in the bath for perhaps twenty-five per cent. a longer time; then, instead of being flat and poor, they will come out better or more brilliant than the best.

There is one other possibility—a very important one to consider at this time of the year—one we have before referred to, the temperature of the silvering solution. If this be not uniform, no amount of care in other parts of the process will enable uniform results to be obtained. Apart from any question of the toning bath, our correspondent and others in like difficulties will obtain uniform results by having their paper uniform in surface and floated at a uniform temperature.—*British Journal of Photography.*

A NOVEL PRINTING PROCESS.

R. CHILD BAYLEY.

FOR those who make the trial of new processes, rather than the continued practice of older and more recognized methods, their delight, the following particulars of a printing process with manganic lactate may be interesting. It is to Messrs. Lumiere Frères, of Lyons, that we owe the discovery that this salt is sensitive to light, and that this sensitiveness can be utilized in a way which, if not at present practical, as the word is generally understood, is at least practicable; that is to say presentable prints can be obtained by its means, the colors of which are at least novel and varied.

The first necessity for the process is suitable paper, which must not only be of a fine hard white surface, but should be coated with gelatine to absorb the sensitising material. As such paper is not, as far as I know, an article of commerce, a small quantity for experimental purposes can be prepared by taking a piece of any commercial gelatino-chloride paper which has not been exposed to light, fixing in clean hypo and well washing.

The chemicals required are potassium permanganate, strong lactic acid, and glucose or grape sugar, together with aniline sulphate, orthotoluidine sulphate or paramidophenol for development. A ten-ounce beaker or flask, a funnel and tuft of cotton wool for filtering, a broad camel-hair brush, some clean blotting paper, and the gelatinised paper above described are also necessary.

To prepare the sensitising solution, 100 gr. of potassium permanganate are put into the flask or beaker, and 2 oz. of cold water poured in. The vessel is then placed in a jar or basin of the coldest water obtainable, which during the operation should be frequently changed, and 4½ drm. of the lactic acid added, a very little at a time. The addition of the lactic acid should take at least a half an hour, a few drops being poured in and the vessel swirled round, kept as cold as possible all the time, then a few more drops and more agitation, and so on. The reason for this is that the reaction is a very violent one, the mixture getting hot, much effervescence taking place, and unless these precautions are observed, the contents of the beaker or flask will froth over and be lost. When all the acid is added, it can be left standing in the water for a few hours, if possible, with an occasional shake, until the effervescence has quite finished, and a thick brownish-black liquid results. A drachm of glucose dissolved in half an ounce of hot water and allowed to cool must now be mixed in with this liquid, which can then be filtered through a tuft of cotton wool placed in a funnel. The sensitising solution is now ready for use.

To coat the gelatinised paper it should be cut up into suitable sizes, and a piece taken and laid, gelatine side uppermost, on a clean sheet of glass. Both the paper and glass should be quite dry. The sensitising solution being poured into a flat dish or saucer, a little must be taken up on the flat camel-hair brush and, keeping the paper in position on the glass by holding two of its corners with the thumb and forefinger of the left hand, with the right it is brushed over two or three times in different directions with the solution. Care should be taken that the back of the paper is kept free from the sensitising liquid, which must be allowed to soak into the gelatine for half a minute, and then the paper placed between blotting paper, the excess blotted off, after which it can be hung up by one corner to dry in the dark.

As this paper yields a negative image from a negative, printing has to be performed by using a positive or transparency in the place of the negative, and should be carried on until those parts which are to be represented by white in the finished print

are actually white. Development is accomplished by immersing the print in a saturated solution of aniline sulphate in water if a green color be desired ; if a few drops of liquor ammonia be added a violet color results. By using orthotoluidine sulphate solution rendered slightly acid with hydrochloric acid a deep blue image results ; or if the acid be replaced by ammonia, a violet one similar to that just mentioned. Para-amidophenol develops an image possessing much the same color as an ordinary silver print. The developing solutions in all cases should be as strong as possible, and the transparencies vigorous to obtain vigorous prints.

Development is almost instantaneous, and after remaining half a minute in the developer, the prints can be transferred to water, in several changes of which they must be washed ; they are then finished.

The whole of the operations, except the drying of the sensitised paper, can be carried out in a moderate amount of daylight. The paper need not be so sensitive as ordinary albumenised paper. The effect of light, moreover,—this being a reversal of the usual order of things—is not to make the sensitive material darker in color, but lighter.—*The London Amateur Photographer.*

The Power of Vibration.—Bands of music are forbidden to play on most of the large bridges of the world. A constant succession of sound waves, especially such as come from the playing of a band, will excite the wires to vibration. At first the vibrations are very slight, but they will increase as the sound waves continue to come. The principal reason why bands are not allowed to play when crossing certain bridges, the suspension bridge at Niagara, for instance, is that if followed by processions of any kind they will keep step with the music, and this regular step would cause the wires to vibrate. At suspension bridges military companies are not allowed to march across in regular step, but break ranks. The regular trotting gait of a large dog across a suspension bridge is more dangerous to the bridge than a heavily loaded wagon drawn by a team of large horses.

PHOTO-CERAMICS: THE FASHION FOR 1895.

WE have long recognized, says *The Photogram* for May, 1895, the necessity of some great and general improvement in photography as a profession and a business; and also that amateur photography, if it is to maintain its hold upon and its interest for the public, must be constantly opening fresh fields. On the establishment of *The Photogram*, we determined to put in practice our belief that a trade journal ought to "work as well as preach," and at once undertook such work as we could towards the opening out and popularizing of the most important recent developments of photography.

For this year we set ourselves a grander task, the reviving and popularizing of that beautiful work, the most exquisite and the least perishable of all the photographic processes, the production of ceramic enamels.

We carefully considered why ceramic work had not been a greater success in the past, and divided the causes into two sections.

(1) It failed to become popular and general with photographers, professional and amateur, because:—

(a) The process was largely a secret.

(b) The instructions published were (in some cases at any rate) unworkable and misleading, which led some who took up the work to abandon it in disgust.

(c) The materials were difficult to obtain, had to be collected from various sources (often difficult to find), and were exorbitant in price as well as uncertain in quality.

(d) The furnace for firing was an expense and a trouble; while "trade" firing was generally undertaken only as a favor and at an exorbitant price.

(2) It failed to become popular with the public because the few who did work the process successfully considered themselves artists rather than commercial workers, and demanded such prices as made ceramics impossible to other than the wealthiest classes.

An event has just occurred which has caused us to call attention to the matter earlier than we intended. The consideration is that the authorities of the Imperial Institute Photographic Exhibition have decided to make a special feature of ceramic work, and have devoted a very large and prominent space to the loan collection illustrating this work, the arrangement of which they have placed in the hands of H. Snowden Ward and E. J. Wall. We expect that ample arrangements for demonstrations will be made in the exhibition. Such an opportunity for pushing the work is not to be missed, so we have hurried forward all our preparations as far as possible, for we believe that, with the assistance of the professional photographers, photographic societies, and the press, the work can be made as popular and as profitable as were the cartes-de-visite in their early days. We know that the photographic press will support the movement, for our contemporaries have often urged the revival of ceramic enamels as a way out of "Darkest Photography." Of the interest of the "lay" press we are assured, especially of that portion which appeals to the ladies, for the art is extremely beautiful.

Photographers can assist the movement immensely; in fact, it is mostly upon them that its success will depend, and to them that the profits will accrue. We suggest that every professional photographer who needs an attractive novelty should at once obtain specimens from one or other of the trade houses above mentioned. He can also obtain from us, at a very low price, an attractive little booklet. It will have the photographer's own name on cover, and will only be supplied to one customer in a town, unless two are willing to use the booklet simultaneously. Specimen and prices can be obtained free for one stamp.

Amateur photographers who wish to take an interest in these beautiful processes will find outline working particulars in early issues, and very full instructions in Ethelbert Henry's book upon the subject, which will be very shortly published. If they take up the work they can hardly fail to be fascinated with it; and by the publicity that they can give to it amongst their friends, at the societies' meetings, they may do a good turn to the professional photographer.

THE PROPOSED CONSTITUTION AND BY-LAWS OF THE P. A. OF A.

THE Executive Committee or the P. A. of A. submit a plan of reorganization of the National Association, to be submitted and acted upon by its members at the Detroit Convention.

They also recommend the reconstruction of the "Constitution and By-Laws" as indicated by printed copy herewith, as being the most commendable for future success of the States and National Associations.

The existence of the various state associations makes it necessary to change the laws and government of the National. The purpose is not to jeopardise the interests and welfare of the states, *but to aid them*, and to maintain and stimulate a still higher standard of photography in the future.

MANUAL OF THE PHOTOGRAPHERS' ASSOCIATION OF AMERICA.

PREAMBLE.

Whereas the advancement of the Art of Photography and the elevation of the professional character of its members, the establishment of a higher and more perfect system of conducting the business of photography, the promotion of friendly intercourse and feeling, and the unity of purpose in pursuing the direction that points to its greatest success as an art, therefore, we the members of the Convention, now assembled in Detroit, Mich., August, 1895, composed of photographers from various sections of the United States, do now adopt the following Constitution and By-Laws.

CONSTITUTION.

ARTICLE I.

This Association shall be called the Photographers' Association of America. Its aim shall be to encourage the various State Organizations, and to promote a friendly intercourse of feeling among such State Organizations, and to further unite and encourage the photographers of the United States and Canada in the following objects:

First. To establish the relations between members of the profession and the people at large upon just and business principles, which shall promote public welfare, and be of mutual advantage.

Second. To improve the science and art of photography by diffusing scientific knowledge among its members, fostering photographic literature, stimulating discovery and invention, and encouraging the production and manufacture of all articles required for photographic use.

Third. To discourage and oppose any unjust opposition which tends to hamper the progress of the art.

ARTICLE II.—STRUCTURE OF THE ASSOCIATION.

Section 1st. The Association shall be constituted as follows:

1. Such State Associations as shall become members of the National Association.
2. Such individual members of states and territories where no state or territorial organizations exist.
3. Such photographers, inventors and scientific men who may be deemed worthy of distinction to membership.

Sec. 2. No change shall be made in the structure of the Association as above established, save by amendment of this Constitution.

ARTICLE III.—MEMBERSHIP.

Section 1. The membership of this association shall consist of regular and associate members.

1. Regular members shall be such members of state organizations, who are photographers in good standing, or such photographers who reside in a state or territory, where no state or territorial organization exists.
2. Associate members shall consist of manufacturers of photographic material dealers in same, and their representatives and employees.
3. All present and past presidents of State Associations who become members, shall be considered ex-officio members of the Legislative Body of this Association.

ARTICLE IV.—POWERS.

Section 1. Legislative powers shall be vested in the National Association which shall be composed as follows:

1. The officers as provided in this Constitution.
2. The National Representatives legally elected, appointed or selected.

Sec. 2. The Officers of the National Association shall be as follows: President, First Vice-President, Second Vice-President, Secretary, and Treasurer, who shall be elected triennially as provided by law, and who shall hold office for the term of three years, or until their successors are duly elected and installed.

Sec. 3. National Representatives shall be elected by the State Associations in the same manner as State Officers are elected.

Sec. 4. The term of a National Representative shall be three years next succeeding his election or appointment.

Sec. 5. Resignation of membership shall be made in writing to the secretary or treasurer. All resignations shall be acknowledged in writing by the officer who receives them, and shall be reported to the next regular meeting of the Association.

Sec. 6. Eminent men in the United States and other countries, inventors, photographers, and other scientific men who may be thought worthy of the distinction may be elected honorary members; they shall not however be required to contribute to the funds, nor shall they be eligible to hold office or vote at a meeting.

ARTICLE V.—OFFICERS AND THEIR DUTIES.

Section 1. The duties of the president shall be such as usually devolve upon the presiding officer of a deliberative or parliamentary body.

Sec. 2. In the event of the temporary absence or inability of the president, the first vice-president shall succeed to the duties of the president; should the first vice-president be absent, the second vice-president shall discharge the duties of the president.

Sec. 3. The duties of the first vice-president shall be to take charge of the art exhibits at conventions, and perform such duties as will insure the prosperity and welfare of the Association.

Sec. 4. The second vice-president shall have charge of the Instructive Sessions at conventions, and shall be considered chairman of all committees appointed for such purposes.

Sec. 5. The secretary shall keep fair and correct minutes of the proceedings of the meetings, and carefully preserve on file all reports, essays and papers received by the Association, and shall be charged with the necessary foreign and scientific correspondence. He shall receive five per cent. of the gross receipts as full compensation for his services. Any moneys collected by the secretary shall be immediately turned over to the treasurer, taking his receipt for the same. He shall make an accurate and detailed report of the business of his office in time to be audited at the annual meeting of the Executive Committee.

Sec. 6. The treasurer shall collect and take charge of the funds of the Association. He shall pay no moneys except by order of the president and secretary. He shall present a statement of his accounts at each annual meeting of the Executive Committee. The treasurer shall receive five per cent. of the gross receipts as full compensation for his services.

In case of absence of the treasurer, he shall appoint a deputy with power of attorney to fulfil his duties. The treasurer shall be required to give an indemnity bond that shall be deemed sufficient and satisfactory to the members of the Executive Committee and said bond shall remain in the custody of the Association.

ARTICLE VI.—BOARD OF TRUSTEES AND STANDING COMMITTEES.

Section 1. The Board of Trustees shall consist of the President and two Vice-Presidents.

Sec. 2. The Executive Committee shall consist of five officers, as heretofore enumerated, and they shall have charge of the general affairs of the Association.

Sec. 3. A Committee on the Progress of Photography consisting of three members shall be appointed by the President at each convention, who shall make a report in writing at the next regular convention.

Sec. 4. A Committee on Credentials, consisting of the president, treasurer and secretary, shall exist, whose duty it shall be to pass upon all questions involving the right of membership and representation.

ARTICLE VII.

Section 1. The revenue of the National Association shall be derived from State Association tax, membership dues, voluntary donations and the sale of space at conventions.

ARTICLE VIII.

The meetings of this Association shall be held triennially as hereafter provided.

ARTICLE IX.—AMENDMENTS.

The Constitution may be altered or amended by a vote of three-fourths of the members present at any regular meeting, and notice to alter or amend the same shall be given at least one sitting before a vote can be taken thereon.

BY-LAWS.

ARTICLE I.

Section 1. The triennial meetings shall be held at such time and place as may be determined by the Executive Committee.

Sec. 2. Special meetings of the Executive Committee may be called by the President whenever deemed expedient.

ARTICLE II.—QUORUM.

Twenty-five representatives including the Executive Committee shall constitute a quorum for the transaction of the business of the Association.

ARTICLE III.—MEMBERSHIP (QUALIFICATIONS).

Sec. 1. Each State Organization which becomes a member of this Association shall be entitled to one representative to every fifty members of each State Organization. Representatives shall be entitled to their railroad fares to and from the triennial meetings.

Sec. 2. In states and territories where no local organizations exists, two representatives shall be selected by the Executive Committee in such states or territories, to represent their state or territory in the National Association.

Sec. 3. Application to membership shall be made in writing to the Treasurer who will forward same to the remaining Committee on Credentials for approval.

Sec. 4. No photographer residing in a state or territory where a local organization exists can become a member of this Association, except through the medium of such state or territorial organization.

ARTICLE IV.—DUES.

Section 1. Each State Association shall be required to pay twenty-five cents per capita tax annually into the treasury of this Association.

Sec. 2. Individual members (regular and associate) shall be required to pay an initiation fee of two dollars and one dollar dues on application to the Treasurer. Dues of individual members shall be payable annually.

Sec. 3. The tax or dues of members shall be payable the month of May of each year, in the event of failure to pay the required dues or tax at such time, or within thirty days thereafter, such members shall forfeit the right to membersh'p, and can only be reinstated by the consent of the Executive Committee after a thorough investigation has been made.

ARTICLE V.—ELECTIONS.

Section 1. All elections shall be held at the morning session of the second day of the Convention, shall be by written ballot, and shall require a majority of all the votes cast to elect. If upon the second ballot no one receives such majority the one receiving the lowest number of votes shall be dropped from the list and so at each succeeding ballot until an election is had.

Sec. 2. Candidates for office shall be regularly nominated by the members in open meeting previous to election, and no ballot cast for one not so nominated shall be counted.

Sec. 3. All persons elected officers shall signify their acceptance or notify the Secretary within one month of their election.

Sec. 4. The officers of the Executive Committee shall be entitled to their expenses attending meetings and conventions, the same to be paid by draft on the treasury.

ARTICLE VI.—VACANCIES.

Section 1. In the event of temporary absence or a permanent vacancy of any office, or in standing committees, except in the office of president, the vacancy shall be ordered filled by the president.

Sec. 2. In the event of vacancy in the office of president, the first vice-president shall discharge the duties of that office until the next regular election, and if for any reason he be unable to fill the position, the second vice-president shall succeed.

ARTICLE VII.—MISCELLANEOUS.

Sec. 1. Except as otherwise provided a majority of all the valid votes cast, shall be deemed sufficient to determine any question.

Sec. 2. The Committee on Credentials shall report all new members, and any matter pertaining to their office at the regular triennial meeting of the Association.

Sec. 3. No member shall be deprived of membership or privileges of such except through the medium of charges made by another member at a regular convention, nor until two-thirds of the members present shall vote to suspend or expel said member.

Sec. 4. Any motion duly made or seconded shall be recognized by the president, and shall then only be debatable.

Sec. 5. Any motion made and seconded after being duly recognized by the president, shall be open for discussion, and while it is before the Association no other motion shall be received, unless to amend, divide, commit, to lay on the table, postpone, or adjourn said motion.

ARTICLE VIII.—ORDER OF BUSINESS.

- Section 1.* (1). Calling Convention to order.
2. Calling Roll of Officers.
3. Reading Minutes last Convention.
4. Report of Committee on Credentials.
5. Reports of Officers and their Reference.
6. Report of Standing and Special Committees.
7. Miscellaneous Papers and Communications.

ARTICLE IX.—AMENDMENTS.

This Association may, from time to time, enact such By-Laws, Rules and Regulations as may be deemed proper for its good government, provided such By-Laws, Rules and Regulations, shall be consistent with the provisions of the Constitution.

All meetings of this Association to be governed by "Cushing's Manual."

Photography in the Harem.—“The modern Turk has, in a quiet way, grown prodigiously fond of photography,” says a lady who acts as the manageress of one of the greatest establishments in London. “I was recently in the employment of a relation at Constantinople, and I had the honor of photographing some fifty of the wives and daughters of the present Sultan. These ladies are very ordinary ones, indeed, for the most part, to what your imagination might picture, and all of them are dressed in the latest Parisian fashions, that is, for photographic purposes. All the same, one or two of the Sultan’s daughters are very beautiful girls, and have been taught and educated by Miss Mumford and other English governesses. They showed the most childish delight at being photographed. I may say here that photography is acting as a social force in Turkey, for a young man who wishes to take to himself a wife need no longer trust absolutely to the report of his female friends alone, as he once had to do, for the photograph of the lady is now shown to him. And the women, too, can now, without violating the strict Turkish law in such matters, send their photographs about in order to create an impression.”

THE PROPOSED COPYRIGHT LEAGUE.

ADDRESS of the Committee of the proposed Photographers' Copyright League, 13 and 15 West Twenty-fourth Street, New York City.—Art in Photography is at last a generally acknowledged factor, and the productions of photographers have become the chief source of supply for the illustrations which fill newspapers and periodicals. Even the Courts now recognize that fact, and extend the protection of the Copyright Law to all such photographs as are "artistic."

During the past ten years a vigorous battle has been waging between a few determined photographers on the one hand, and an indiscriminate host of lithographers and other pirates, on the other. The latter had become so used to appropriating without leave whatever they saw was good and original in photographic publications, giving in return neither remuneration nor even credit, and the results to them were so profitable, that the effort to break them of the pernicious habit was no easy matter. On the contrary it developed rapidly into a serious and bitterly-contested struggle.

Thus far, each photographer has done his fighting single-handed, and generally against large and powerful corporations. In spite of this, however, the result has been almost uniformly a complete victory for the photographer, decision after decision being rendered in his favor by the Courts, though often only after years of burdensome and expensive litigation.

In view of these facts and other reasons which follow, we deem it wise and expedient at this time to band our best men together, so that in future a united front will be opposed to infringers of all kinds. There have been many demands within the past few years for such a Union, and we know of no question now ripe in the fraternity in which a community of interests would be more desirable, mutual and in every way advantageous to us all.

Our proposition is that an organization (to be known as the Photographers' Copyright League of America) be formed at once, and take upon itself, by means of an advisory committee to be elected annually, the prosecution of all infringers of the copyright works of any of its members, whenever a proper case for such prosecution is presented by him; that it defray all expenses of same; and that in return, so as to make itself self-supporting, a fair percentage of all recoveries so obtained be turned into the treasury of the organization,

in addition to a moderate annual membership contribution just sufficient to cover its necessary running expenses.

In union we shall certainly find our greatest strength. We are confident that such a League, composed of the artistic photographers of the country, will raise the dignity of our profession, and will often alone be sufficient to discourage infringements and frighten off piracy,—but there is also greater success and economy in the plan. All our litigation would naturally be placed in the hands of the most experienced counsel, to be employed by the League for stated periods, and the cost of same would therefore be much less than if it were carried on by each individual for himself.

One other point. On March 4th, last, a new copyright law was enacted which, though in some ways an improvement on the former one, is still very deficient. Our fair rights demand that legislation give us a law which will really protect us by really punishing unscrupulous infringers. Of course, the advantage of such a demand before Congress being backed by a National Organization (instead of by individuals) of so important a profession as ours, must be apparent to all.

All this will surely hasten the day when the product of our brains, safeguarded by the stamp of the government under which we live, will be respected and regarded as sacred, no less than any other property; and when it will be no longer stolen with impunity by the powerful and the unscrupulous.

Committee.—Napoleon Sarony, B. J. Falk, James L. Breese, Charles E. Bolles, Geo. G. Rockwood.

Coated Paper Industry.—Coated paper, so extensively used for printing photo-mechanical reproductions, is principally made in Germany, England, and the United States, but the largest export trade, according to the *Wood Pulp News*, is in the hands of the Germans, says an English exchange. This view is taken by the firm of Kupfer Bros., who turn out at their factory in Furth, Bavaria, 700 reams of paper per day. It is stated that the English production is not large, owing to the want of proper facilities; and in regard to the United States more paper is imported than manufactured, although it is admitted that the quality of the home manufacture is as good as that imported. The reason that German coated papers are in demand is that they are manufactured and sold at a low price.

The Editorial Dropshutter.

Photo-Mechanical Printing Processes, by Ernest Edwards. This excellent paper, read before the Society of Amateur Photographers of New York, and republished in our March and April JOURNAL, should have been credited to the *Journal of the Society of Amateur Photographers of New York*, published by the Society under the auspices of Mr. Robert A. B. Dayton, chairman of the publication committee. By an oversight this notice was omitted.

Our Illustrations.—"A Street Scene in Nordheim, Province Hanover, Germany." This picturesque bit of German street architecture and life is a snapshot made from a second-story window. It was made on a Stanley plate with Ross lens, f-32, and developed with J. C. tabloids.

"A Scene at Beach Haven," our extra illustration, is one of the exquisite seascapes for which Mr. Engle is so well-known. The scene is Beach Haven, near Little Egg Harbor Bay, on the New Jersey coast. Beach Haven offers many opportunities for the amateur photographer for making studies of the ocean and water views. At Hotel Engleside a dark-room with running water is provided, and placed at the disposal of guests and visitors. In addition every facility is afforded them by Mr. Engle to ply their art.

Schweir vs. Vogel.—Left-handed compliments are flying thick and fast in photographic circles in Germany between these two well-known photographic leaders. It's all about a resolution said to have been passed, or not passed, in the German Photo Congress. The matter is freely ventilated in a late number of the *Deutsche Photographen Zeitung*. Brother Schweir evidently has the best of the bargain, and he does not hesitate to lay it on and rub it in. From indications, the next meeting of the German Photo Congress will be an unusually lively one.

The manager of the Pavilion Theatre, Whitechapel, recently added a novelty to his pantomime, when he had the crowded house which assembled to witness the performance of "Babes in the Wood," photographed from the stage. The photograph, which was prefaced by a speech from the manager, was taken between the scenes, with the result that the whole of the audience were in their places, and received the addition to the program with hearty applause.

Bogus Art.—An interesting trial concerning the authenticity of a picture will soon come up in Paris. The painting in question is one by Millet, which was bought by a rich manufacturer for 10,000 francs. The owner claims that the picture is not genuine, and is bringing action against the dealer for palming off a forgery on him. The trial will doubtless be a very instructive one, many leading authorities being called to testify as to the genuineness of the picture.

An Autograph Offer.—An author of some repute received a copy of his first book, published ten years ago, from a purchaser recently, with the request that he write something on the title page. The copy, when returned, had this inscription :

"I'd fondly hoped this book had died,
It fills me with so little pride.
Some day, perchance, should funds grow slack,
You'll let me know. I'll buy it back."

Light formed the subject of a capital lantern lecture delivered at the Photographic Club, on Wednesday, January 23, by Mr. Birt Acres. Many beautiful experiments with the complementaries were shown, but, perhaps, to the audience, which was entirely photographic, nothing was more interesting or instructive than the effect of passing the light through different coloured glasses on to a coloured picture placed on the blackboard. This was quite a useful object-lesson in orthochromatics. In the course of the lecture, which we believe is to be published, Mr. Acres stated that he had discovered a new medium for dark-room work, which passed only absolutely safe light.

Civility and Politeness.—In the present JOURNAL we publish a translation from the German on the treatment of customers. Since the above was in print, a case came under our immediate notice which proves the old saying that "civility is the best-paying salesman." The office of a certain photo-mechanical establishment, not a thousand miles from Philadelphia, was frequently left in charge of a clerk, who was anything but courteous, and whenever he was in charge, the rule was anything but courtesy or polite attention. This might have answered when photo-engravers were scarce, before prices tumbled and the scramble for customers commenced, but not at the present time. A few days ago, two customers, about to place a large order, were told by the clerk that "if they were not willing to wait until he was ready, they had better go elsewhere." The advice was taken; two large orders were placed elsewhere, and the customers lost to the firm. Civility and politeness in business cost nothing and yet bring the best results.

Achromatic Lenses.—It is asserted in the English Philosophical Transactions that "the idea of making achromatic lenses for telescopes occurred to David Gregory from reflecting on the admirable way in which nature has combined the different humors of the eye." Nearly if not quite all other useful inventions are in the same way humble imitations of the contrivances of nature.

Paper Feathers.—And still another use for paper. A correspondent of the London *World*, referring to Lord Lilford's idea of making artificial feathers of paper for millinery purposes, says the proposition has long been carried out on the Italian stage. In those cheaper theatres of the peninsula, which are so seldom visited by the English tourist, the tissue paper feather waves from every cap and helmet in the most diverting manner; Manrico and the Conte di Luna compete in length of plume as they vie in power of lung; and "I once saw at the Nazionale, in Florence," he adds, "the feather of a diminutive tenore robusto touch the calves of his stout little legs. I observed that at the higher priced theatres Faust, Valentine and Mephistopheles wore real feathers."

A very useful and well-compiled work on artificial light in photography (*Les Lumières Artificielles en Photographie*) has just been issued by Messrs. Gauthier-Villars et Fils, the well-known photographic publishers of 55, Quai des Grands Augustins, Paris. It is by the late Commandant H. Fourtier, a voluminous contributor to photographic literature, who, we are sorry to say, died a few weeks ago. He was probably the one, among French authors, who devoted most attention to lantern projection work. The book before us is freely illustrated, and treats of the photographic uses and values of all known illuminants, including gas, oil, magnesium, aluminium, zinc, the electric light, etc. The second part of the book is wholly devoted to a theoretical and practical study of magnesium and aluminium, in connection with which the author has gathered together some especially valuable information. The work deserves to be translated into English, in which language it would assuredly have a good sale in this country.

Lantern Exhibition.—A very entertaining and instructive exhibition of lantern slides was given lately by the Brooklyn Academy of Photography at Remsen Hall. These exhibitions are given frequently by the members to their friends, and are invitation affairs. The invitation to the one last evening was a very unique affair, being a printed duplicate of a lantern slide. The lantern was manipulated by Starks W. Lewis, and the talk and explanation were

given by H. W. Howard. The set included views of Narragansett Pier, pictures of the naval parade in 1893, and single views of some of the ships forming the squadron. Other marine views were shown, including beautiful views of the old Constellation under full sail; schooners, catboats and canoes also in sailing order; scenes along the shores of Bay Ridge, Fort Hamilton and the Narrows; a magnificent view of Liberty Island and the statue; scenes in the quaint New England villages of Lymne and Washington, Conn., and a goodly quantity of excellent landscape views of the picturesque Bronx.

Brain Power.—According to a writer in the *Popular Science Monthly*, the nerves of warm-blooded animals telegraph information to their brains at the rate of about 150 feet per second. When anyone puts his hand on hot iron he does not feel it until the nerves have sent the message to the brain, and in the interval his hand has been burned. It is thought that this would not be the case if the nerve message were transmitted with the intensity and velocity of electricity transmitted over a copper wire to a brain acting with the promptness of a Leyden jar.

Photographing Soap Bubbles.—Lord Rayleigh, in delivering his second lecture at the Royal Institution, on March 9, gave an explanation of some of the methods he had recourse to when endeavoring to become acquainted with what, on account of rapidity of motion, would otherwise elude observation. The most obvious method of observing what was going on when changes were very rapid was, he said, to get an instantaneous picture. For this purpose the degree of "instantaneity" had to be varied considerably. By means of the magnesium flash, produced by blowing powder of magnesium into a flame, a brilliant light of great photographic qualities was generated. Although it occupied about the tenth part of a second, and was instantaneous enough for babies and many other objects, it would not do for all purposes. The electric spark, however, served for almost anything that ever happened, as it could be reduced in duration below one-millionth part of a second, during which time there were not many things which could do much. This method might be turned to excellent account in all kinds of observations. He had used it himself in many cases when he did not know in the least what was going to be revealed. Many complicated phenomena moved so quickly that it was impossible to know what took place, but by the light of the flash one could see what transpired at some particular moment, and that would often give the key to the enigma. He himself had photo-

graphed the breaking up of a soap bubble, a process which occupied between the two-hundredth and three-hundredth part of a second.—*Scientific American.*

Woman in Photography.—A reporter who interviewed Sarony on the status of woman in professional photography, obtained the following interesting statement: "There are not many woman photographers, nor is there any good reason why women should not be excellent photographers. They must, of course, learn the business, like any one else, and the posing and lighting, being the finest artistic points, naturally require the greatest artistic aptitude. There are few really good photographers in the country. It requires great skill and constant application and must be closely followed up. It is, of course, conceded that women have a great deal of natural artistic talent, and if they once conclude to start out and become photographers, there is no doubt that they will succeed in it. The business pays well, and by its very nature would seem to invite women, as there are no unpleasant features about it. The enthusiasm of amateur photographers shows the fascination it has for those who become interested in it. I have never known of a single amateur photographer who took it up as a fad or as an amusement who ever willingly gave it up, and I do not see why any one should fail to pursue it with equal ardor as a business, when the financial returns are so good, as a rule, with comparatively little risk of loss. We never teach any one in here. We require the finest talent, ready for practical use, that can be had in the country, and we would not, on any account, teach any one, although we have had persons come in here and offer generous sums to be instructed here. The operators, who do nearly all the mechanical work, are of course at the top. Next in order are the negative retouchers. This is fine, delicate work, well adapted to a woman, and they earn from \$15 to \$30 a week. The printers receive from \$12 to \$25 a week; mounters, about \$7 to \$12 a week, and the spotters—those who remove blemishes—also from \$7 to \$12 a week. Certain artistic perceptions are indispensable to any one who would become a good photographer, or successfully manage any of these branches. Given these and application, and there is nothing whatever in the way of women becoming very successful in this line within a few years."

The Great International Prize Competition and Summer Photographic Exhibition, to be held at the Agricultural Hall in London from June 29th to July 6th next, is now fairly launched. There will be two distinct competitions, one under the Conference

rules, with H. Horsley Hinton, Rev. F. C. Lambert, and H. P. Robinson as judges (whose names will appear on the prospectus), in which the classes are as follows:

1. Landscape.
2. Seascapes.
3. Hand-camera Work.
4. Figure Studies and Genre.
5. Beginners.
6. Ladies' Work.
7. Animal Study.
8. Smoking Picture.
9. Architecture.
10. Scientific Work.
11. Instantaneous and Snap Shot.
12. Process Work.
13. Society Competition.

Gold, silver, and bronze medals are offered in classes 1 to 4, and silver and bronze medals in classes 5 to 12. The prize for class 13 is an optical lantern. The judging in classes 1 to 8 and No. 13 will be from the artistic standpoint, in classes 9 to 12 other matters will be taken into consideration. The prints need not be framed, and the entrance fee is 1s. per print up to a mount or frame of twenty inches, above that 2s. per print.

The second series of competitions are for amateurs only, who have not previously gained medals or prizes at a photographic exhibition. The judges' names will be announced later. The classes in this are—

Landscape, Marine, Portraiture, Architecture and Buildings, Holiday Work (set of six), Snap-shots (set of six).

In this competition the winning pictures (and perhaps a selection from the others) only will be hung. Silver and bronze medals, hand cameras by the Eastman Co., Adams & Co., and the Vedette Co. are also offered. Work is expected from Australia, New Zealand, South Africa, Japan, America, India, etc., as well as the Continent generally. Prospectuses, etc., may be obtained from Walter D. Welford, general manager, 59 and 60 Chancery Lane, W. C.

The poet Campbell once proposed the health of Napoleon because he shot a bookseller. To judge from the way half the pictures at our exhibitions are framed, our artists could afford to toast the murderer of a frame maker on the same principle.

Good Business Maxims.—Carefully examine every detail of your business. Be prompt in everything. Take time to consider and then decide positively. Dare to go forward. Bear troubles patiently. Be brave in the struggle of life. Maintain your integrity as a sacred thing. Never tell business lies. Make no useless acquaintances. Never appear something more than you are. Pay your debts promptly. Shun strong liquor. Employ your time well. Do not reckon upon chance. Be polite to everybody. Never be discouraged. Then work hard, and you will succeed.—*Notes and Queries.*

Photographic Hints and Formulae.

Employment of Pyrocatechin as a Developer.—The authors have investigated this matter, and have come to the conclusion that pyrocatechin can be used as a developer, yielding negatives equal to those resulting from the employment of any of the other developers. The solutions keep perfectly, and admit of prolonged development without fear of fog. Several plates can be developed in the same solution. The resulting negatives are very clear in the shadows and of a good printing colour, the required density being easily and quickly obtained. The obstacle to its employment is that of price, but this they claim to have overcome by having pointed out that it can be prepared synthetically.

Toning Printing-out Emulsion Papers with Platinum Salts.—Valenta has studied the subject, and concludes that the difficulty of toning is to be ascribed to the free acids and silver salts, particularly the acetate, tartrate and citrate. He suggests well washing the prints and then immersing in a bath of

Water,	1,000 ccm.
Salt,	25 grammes.
Sodium carbonate,	5 "

The prints should remain in this for five or ten minutes, and should be then washed and toned in the following bath—

Water,	1,000 parts.
Solution of potassium chloroplatinate (1 : 10)	30-50 "
Aluminium chloride,	20 "

This bath is acid and the aluminium hardens the gelatine. The prints should be toned till on looking through they appear of the desired tone, then washed, rinsed in weak ammonia, and fixed in hypo 1 : 10.

Varnish for Celluloid Films.—The following is specially commended for celluloid films—

Powdered ambers,	5 grammes.
Chloroform,	45 "
Coal-tar benzine,	45 "
Gum dammar,	7½ "

Allow to stand for a long time in a warm place and decant twice before use.

A Printing Dodge for increasing the intensity of light acting on the negative was recently described in the *British Journal*. A crossed bi-convex lens, of 6 in. diameter, was placed in front of the frame.

The exposure was by this means reduced to one fourth. The rays must not be brought to a focus on the negative or the heat will crack the glass.

An Impervious Coating for Wooden Baths.—

Gutta-percha,	50 grammes.
Paraffine,	50 "

Prepare the mixture over a slow fire and apply with the aid of a metallic brush. After application pass a hot iron to obtain the polish. This coating renders wooden tanks absolutely waterproof, and is not acted on by alkalies or acids.

Removing Rust From a Lens.—A lens sometimes acquires a brown, rusty stain on the surface, which no amount of rubbing or cleaning will remove. By applying a paste composed of putty powder and water to the stains, and then rubbing briskly with either the point of the finger or the side of the hand, every spot of rust or stain will be removed in a few minutes. This applies to photographic or other lenses, except the object glass of a telescope, which would be irreparably damaged by such treatment.

A Non-Poisonous Intensifier.—Soak the negative in the water till soft, then drain and immerse in

Ammonia,	1 ounce
Water,	1 "

for a minute and a half, and then place in

Cadmium bromide,	15 grains
Alcohol,	35 ounces

till sufficiently intensified.

Negative Marking Ink.—The *Photographische Chronik* publishes the following for putting titles on negatives :—

(1.)

Water,	4 ounces
Sugar,	7 drams
Glycerine,	3 "

(2.)

Alcohol,	4 ounces
Nitrate of mercury,	5 drams
Chloride,	2½ "

The two solutions are mixed and the title written on a piece of paper. When the writing is dry it is transferred to the film of the negative by rubbing the back of the paper with a paper knife or the finger nail.

Platinotype.—In a recent issue of the *Wiener Photogr. Blaetter*, the eminently well-conducted organ of the Vienna Camera Club, a series of nine portraits, printed from three negatives, is reproduced to illustrate an article by Ph. R. von Schoeller on his experiments with platinotype. The portraits are reproductions from platinum prints, showing the results obtained in each case with a harsh, a normal, and a flat negative respectively, and with paper prepared according to three different formulæ, which have been adapted to these three classes of negatives. These illustrations show very clearly that equally good prints on platinotype paper may be produced with either a normal negative, or a thin or a harsh one, provided that in each case a paper is used which has been specially prepared for that class of negative. With regard to the preparation of these three kinds of platinum paper, the author gives the following instructions. The following three solutions should be prepared :—

1. PLATINUM SOLUTION.

Water,	60 c.c.
Potassium chloroplatinate,	10 grammes.

2. IRON SOLUTION.

Water,	100 c.c.
Ferric oxalate,	20 grammes.
Oxalic acid,	1.5 "

3. CHLORATE AND IRON SOLUTION.

Potassium chlorate,	0.4 grammie.
Iron solution (No. 2),	100 c.c.

To sensitise the paper, the above solutions should be mixed as follows :—

For hard negatives :

Platinum solution,	24 c.c.
Iron solution,	22 "
Water,	4 "

For normal negatives :

Platinum solution,	24 c.c.
Iron solution,	14 "
Chlorate and iron solution,	8 "
Water,	4 "

For flat negatives :

Platinum solution,	24 c.c.
Chlorate and iron solution,	22 "
Water,	4 "

It is important to use a well-sized paper, to apply the sensitising solution uniformly to it, and to dry it as quickly as possible, as otherwise the print sinks in too much.

Ozone bleach is good for cleaning old and soiled engravings.

A steel color is developed on brass by using a boiling solution of arsenic chloride, while a careful application of a concentrated solution of sodium sulphide causes a blue coloration. Black, generally used for optical instruments, is obtained from a solution of platinum chloride, to which tin nitrate has been added. In Japan the brass is bronzed by using a boiling solution of copper sulphate, alum and verdigris.

An Intensifier for Negative Reproducing Lines.—

Water,	1000 parts.
Iodine,	14 "
Iodide of potassium,	27 "

The negative is allowed to remain in this until entirely yellow. It is thoroughly washed, so that the water running from it is colorless. Afterward the negative is placed in a one per cent. solution of Schlippe's salt rendered alkaline by a little caustic soda.

A Developer for Process Work.—In our April JOURNAL we published a valuable paper by Mr. Carbutt on the use of dry plates in the various photo-mechanical reproduction processes. Several communications have reached us calling attention to the formulæ as too complicated for practical purposes. Personally we have had no occasion to use dry-plates for making a half-tone negative, but have had considerable experience in their use for making the so-called black and white direct reproductions. For this purpose the following simple formula has given satisfactory results:

A.

Hydrochinone,	2 dr.
Citric Acid,	1 dr.
Bromide of Potassium,	½ dr.
Water,	4 oz.

B.

Sulphite of Soda,	½ lb.
Carbonate of Soda,	½ lb.
Carbonate of Potash,	¼ lb.
Water,	1 part

For use ½ oz. of A, 1½ oz. B, water 8 oz. For greater density add 1 drachm of A, as an accelerator ½ oz. of B. The proportions as first given, although working a little slow, should give perfect results. Fix in a fresh saturated solution of hypo, wash thoroughly with the use of the above developer. Intensification has but rarely been found necessary.—J. F. S.

To prepare ox-gall for artistic or photographic purposes.

—Procure from a butcher half a pint of ox-gall. Place this in a clean saucepan and add an ounce of powdered alum and an ounce of common salt. Place over the fire, and when it boils remove for half an hour to cool; then boil again, and repeat this boiling and cooling for three or four times. After this allow it to settle for three or four hours, and decant off into a bottle, in which put two or three drops of essence of lemon. Cork and preserve for use.

Direct Positives Produced in the Camera.—In the *Phot.-Wochenblatt*, Herr Franz Kogelmann suggests the following modification of the Obernetter process of producing positives directly from nature in the camera.

The plate, which should have been exposed for a much longer time than usual, is developed with ferrous oxalate until the high lights, if the plate be viewed from the back, appear quite black. The plate is then washed in the dark and placed in the following bath:—

Bichromate of potash,	5 parts.
Alum,	75 "
Nitric acid c.p.,	5 "
Sulphuric acid c.p.,	10 "
Distilled water,	800 "

This solution should be free from any trace of chloride. The plate is then thoroughly washed and developed in bright daylight with any good developer, until the required density is obtained. It is essential that in the high lights the silver salt is entirely reduced, so that it may be perfectly dissolved in the bichromate bath, leaving the corresponding parts of the film perfectly transparent.

The Chinese Pharmacopœia contains many peculiar remedies. Snowwater is supposed to be good for worms, while hail-water is poisonous. For eye-troubles the excrescence of bats is recommended. Amber is nervine. Ink is a diuretic, and gunpowder is a vermifuge. Benzoin is good for stomach-ache. It is much adulterated, but there is a sure test. If real, its fumes will charm rats out of their holes. Wheat bread is prescribed for a variety of complaints, and bread-pills are an old remedy with Celestial doctors. Verdigris is good for skin-troubles. Ambergris is a substance coughed up by dragons, and is excellent for healing. Plasters of elephant hide are useful for wounds that heal slowly. Dried scorpions and seed-pears cure a number of diseases. Ashes of paper are an astringent.

The new German word for our button-presser is *Handcameraknipser*.

Photographic Scissors and Paste.

Telegraph operators who have long spells of "sending" with the Morse key are often seized with a complaint, analogous to writers' cramp, to which the name of "Morse-finger" has been given. Cases of operators who have lost their finger-nails are becoming more common than formerly, and the continued tapping with the finger-ends is causing medical men to consider what means can be adopted to obviate unfortunate results.

M. Satcheosky, a Russian scientist, has made a number of observations on changes of ground-temperature with depth, in the mountains of Southern Siberia. He finds that these changes are more rapid on the tops and sides of the mountains than at their feet—that is to say, in the valleys. Furthermore, he finds that the earth's surface in those valleys is colder than on the sides of the neighboring mountains. The facts are well established but they are yet unexplained.

Distance, Stops and Exposure in the Half Tone Process.—To understand the action of a ruled screen let us suppose that a ray of light enters by a single slit and falls on a white sheet. Were the distance between slit and sheet equal to nil we should get only a sharp image of the slit. By gradually removing the screen from the slit the sharpness decreases, till we see nothing but a blurred dot. Every ray passing through the slit gives off lateral rays which diverge more and more with increasing distance from the slit. Now a ruled screen represents a regular succession of such slits through which light of different intensities falls on the sensitive plate. If the ruled screen and the plate were in contact, dots of the same size but different intensity would result, because the rays would not have room to diverge laterally. So the screen is placed at a little distance from the negative plate. The effect is totally changed. Where a strong light passes through the ruled screen, *i.e.*, in the lights of the original, the lateral spread of light will naturally be greater, and the reverse is equally true. So a ruled screen with equal sized dots produces unequal dots. The greater the distance between ruled screen and plate the greater the difference in the size of the dots. Hard originals should be taken with small distance between screen and plate, and flat ones with a great distance. Varying the distance is seldom employed, having great drawbacks. We use different stops. With large stops the angle

of incidence is large, with small ones small. With a screen which causes lateral extension of the ray, the effect is the more marked the more slanting the ray was from the beginning, a large stop being used ; and the less so the incidence of the light being perpendicular and a small stop used. Relative long exposure is necessary with a small stop, and so the shadows have time to fill up with distinct dots. When the lights are vigorous enough, the exposure must be stopped. Large dots make the lights, small ones the shadows. The distance of the plate from the screen and the size of the stop affect the character of the picture. In general, fully developed plates give the best defined dots. If a flat negative is to be reproduced develop till a dot begins to form, then, if necessary, very powerful intensifiers may be used to get contrast enough. I consider copper bromide the best intensifier for half-tone negatives. Mercury serves as a last resource to close the lights. The best shaped dots are obtained by moderate general over exposure and subsequent reduction with iodine and cyanide of potassium. Now one last desperate resource for reproducing a very hard original with a most unfavorable light. Expose quite a short time for a sheet of white paper held before the original, which produces a general quite light tone all over the plate, so that the dots, before too weak, are vigorous enough to stand sufficiently weak intensification.—

Photographische Correspondenz.

Zinc Plates as Substitutes for Lithographic Stones.— Some of the English lithographers are using zinc plates as substitutes for lithographic stones. The zinc plates, as pure as can be obtained, are passed through highly-polished rollers to remove any surface marks, and are then placed in dilute nitric acid, one part of the later to one hundred parts water ; this brings to the surface of the zinc a blackish mass containing impurities, which is removed by washing with water and scouring with pumice powder, this being repeated until the nitric acid and water no longer produces any appreciable amount of the blackish mass—such treatment rendering the plates absorptive, and removing all matters deleterious to lithography. They are now dried, and subjected to the sandblast process, to secure a grained surface, and, this being done, they are placed in a bath composed of four parts of nitric acid, one of phosphoric acid, and 500 of water, after which they are washed with water. In some cases, when fine-grained plates are desired, a bath containing one part of sulphuric acid in 100 parts of water is used instead of a mixture of nitric acid, phosphoric acid and water, as the former in no way interferes with the grain. Finally, the plates are washed with a solution of one part alum to

fifty parts water, after which they are dried and are ready for use. It is claimed that plates of this kind are absorptive and sensitive to grease, and of a similar nature to lithographic stones. They also retain their light color after being submitted to the above-named baths.

Some Costly Metals.—A one-carat diamond, weight-for-weight, is four hundred and sixty times as valuable as gold. It takes a big lump of the yellow stuff to be worth \$1,000,000. Quite a number of other metals are many times as valuable as gold. Gallium, for example, is quoted in the market at \$3,000 an ounce avoirdupois. Traces of it occur in some zinc ores, tons of which must be worked over in order to obtain a trifling quantity. Gallium is a very remarkable substance. At the ordinary summer temperature of 86 degrees F., it becomes liquid like mercury. The latter becomes solid at 39 degrees below zero. Most costly of all metals save only gallium, is germanium, which is quoted at \$1,125 per ounce. Rhodium is worth \$112.50 an ounce; ruthenium, \$90 an ounce; osmium, \$26 an ounce; and palladium, \$24 an ounce. The last is about equal in value to gold. These metals are of no great commercial importance. Most of them are mere curiosities of the laboratory, having been discovered originally by accident, incidental to the analysis of ores. It has been suggested that some of them might be coined, but the supply of them is too uncertain. That was the difficulty with platinum, which the Russian Government minted in the first half of the present century.

Iridium is utilized to some extent for making instruments of delicacy which must have the property of not corroding. It is obtained from "iridosmine," a natural alloy of iridium, osmium, rhodium, platinum and ruthenium. This extraordinary mixture of rare metals is white. Much of it is found in washing for gold in the beach sands of Oregon. It resists the action of all single acids. Its only important use is for tipping gold pens. For this purpose the grains of it, which are flat like gold dust, are picked out with magnifying glasses. At the mints it makes a good deal of trouble, the difficulty being found in separating it from gold bullion.

Indian Red.—This pigment, known to almost every photographer, is brought from Bengal, and is a very rich iron ore, hematite, or peroxide of iron. It is an anomalous red, of a purple-russet hue, good body, and valued, when fine, for the pureness and lakey tone of its tints. It is a coarse powder in its crude state, full of extremely hard and brilliant particles of a dark appearance, sometimes magnetic, and is greatly improved by grinding and washing over. Its chemical

tendency is to deepen, nevertheless it is very permanent, neither light, impure air, mixture with other pigments, time nor fire effecting in general any sensible change in it. Being opaque it covers well. Indian red varies greatly in its hues, that which is most rosy being considered the best, as affording the purest tints. Inferior red ochres have been formerly substituted for it. It is now obtained abundantly, and may be had pure of all respectable manufacturers. Another name for this pigment is Persian red.

Fire in the Patent Office.—The United States Patent Office was for the third time visited by fire about 1.15 o'clock on the afternoon of April 22d. The scene of the blaze was in the southwest corner of the basement in the photographic blue-print room, close to a crowded public thoroughfare. Mr. Flint, chief of this room, was pouring ether into five-gallon jugs, when the liquid exploded, and, running down the floor, came in contact with the stove and ignited. Mr. Flint was caught in the flames and severely burned about the face, arms and shoulders. He was removed to a drug store across the street, where his wounds were dressed, and was then taken to the Emergency Hospital.

The photographers and their assistants had many narrow escapes for their lives, and nearly all were on fire, as the explosives flew all about the room. Besides Mr. Flint, the chief, there were at the time of the explosion Assistant Photographer Theikill, J. B. Wheat, Jr., J. E. Latimer and Mr. Blackage, assistants.

Mr. Theikill's story of the occurrence was that while Mr. Flint was pouring about five gallons of ether into a bottle the bottle fell to the slate floor and broke, the contents running along the place. He began sweeping it toward the door, remarking to those about to be careful with the lamps, etc. Some of the liquid reached the stove and there was an explosion, which was quickly followed by a second with considerable force, blowing up about 75 bottles. Mr. Flint was blown through the door, his head striking a mass of papers piled in the hallway. He arose, his clothing in a blaze, and rushed for the area calling for help.

J. E. Wheat, Jr., was standing near Mr. Flint, and was also blown through the door, his hair ablaze and clothing torn. J. E. Latimer was blown through the open window on to the lawn, and was followed through the adjoining window by Mr. Blackage, who was in the dark room at the time.

Mr. Theikill was blown across the room by the first explosion. He was blown through the window by the second. His escape from inju-

ries was wonderful. His apron was on fire, his head singed, his hat blown into fragments and his coat torn in numerous places.

After half an hour's hard work the firemen extinguished the flames before they could spread to the adjoining offices. The loss was about \$1500, principally in photographic apparatus. Most of the original drawings were saved, and of those destroyed a good many can be replaced.

By 3 o'clock quiet was restored about the building, and the panic-stricken clerks, many of whom were women who had rushed out of the building screaming, resumed their work.

Public attention has frequently been called to danger to human life, and to public property, occasioned by the carrying on of examination of explosives, and other dangerous avocations, and the storage of great quantities of chemicals in the Patent Office.

Measurements of Heights.—Four different methods of doing it.—There are several methods of measuring the heights of mountains and other elevated portions of the earth's surface above the sea level, writes J. Ellard Gore, in *Popular Science Monthly*. Of these may be mentioned the following :—(1) by actual levelling with an engineer's spirit level and graduated staff; (2) by trigonomical calculations based on the measurement of the angles of elevation observed at the extremities of a carefully-measured base line; (3) by observing the temperature of the boiling point of water, and (4) by reading a barometer at the sea level, and again at the top of the mountain the height of which is to be determined. The first of these methods is certainly the most accurate, but it involves a considerable amount of labor, and for very high mountains is sometimes impracticable. The second method is sufficiently accurate if carefully carried out and a nearly level plain is available for the measurement of a base line. The third method is not accurate enough to give reliable results. The fourth is the simplest and most expeditious of all. It is especially useful for finding the difference of level between two points at considerable distances apart, and would be sufficiently accurate if certain difficulties could be successfully surmounted. The principle of the barometric method is as follows: the barometer measures the weight of the atmosphere. The column of mercury in an ordinary mercurial barometer is equal in weight to a column of air of the same diameter, and of a height equal to that of the earth's atmosphere. The densest portion of the atmosphere is that close to the earth's surface, and its density diminishes as we ascend. At the top of a mountain, therefore,

the pressure of the atmosphere will balance a shorter column of mercury, and hence the mercury descends in the tube. From the difference in height of the mercury at the level of the sea and on the top of the mountain it is possible to calculate the height we have ascended.

Are Living Pictures Art?—Like all fads, the "living picture" craze has begun to pall on the public, and theatrical managers are trying to revive general interest in the exhibitions by discarding drapery more and more, and approaching nudity as far as possible. A New York manager has conceived the idea of exhibiting nude "living pictures," with nothing but a covering of bronze powder to take away the appearance of living flesh. He claims that, on the score of decency, the bronze covering is less objectionable than the silk tights, and that all impression of nudity is gone from the statues because bronze has no vitality or suggestion of life. At a hearing before a police justice, several leading artists supported this contention, and testified that the exhibitions are entirely proper and genuinely artistic. William M. Chase, the President of the Society of American Artists, was one of the witnesses, and he testified as follows:

"Do you consider the exhibition offensive to public decency?" asked Justice Simms.

"No, sir, most decidedly not," replied the artist. "I can't imagine how the exhibition could be regarded as such. In my judgment, the statuary, as represented, is remarkably fine—in fact, an educator to the public and elevating, rather than the reverse. I would not hesitate for a minute to take my wife and daughters to the performance, and would regard it as a privilege for them to view the exhibition. I cannot conceive how anybody could look upon these people as nude in this connection. You forget that the posers are human, and can only conceive of them as remarkably fine groupings of statuary. They resemble to a marked degree the old Greek statues, like which nothing has been produced in modern times. The bronzing does away with the fact that they are nude human beings."

"Is it not so that you and your fellow artists alone share this opinion of the nude in art, and that it is at variance with the ideas of the public?" asked Justice Simms.

"It is my opinion and that of my fellow artists most assuredly. I think, however, that it would be much better for the public to become more accustomed to such exhibitions of perfection in the human figure. If this were so, and the public were educated as it should be, it would

never occur to anybody to look upon such depictions as anything immoral. These and similar exhibitions furnish an education in art."

Justice Simms, however, declined to take this view of the case, and held the manager and one of his models for trial. Meantime the exhibitions are continued. A bill dealing with this matter has been introduced in the New York Legislature. It provides for the punishment of all who are in any way concerned in such exposures of women on the stage.

A Word About Boys.—Treat your boys as though they were of some importance, if you would have them manly and self-reliant.

Be careful of the little courtesies. You cannot expect your boy to be respectful and kind, unless you first set him the example.

If you would have your boy make you his confidant, take an active interest in all that he does. Don't be too critical, but ask for his views and opinions at all times.

Don't keep your boys in ignorance of things they should know. It is not the wholesome truth, but the unwholesome way in which it is acquired, that ruins many a young man.

Don't act as if you thought your boy amounted to nothing, nor be continually making comparisons between him and some neighbor's son, to his disadvantage; nothing will dishearten him quicker.

Don't think that anything is good enough for the boys, and that they don't care for nice things. Have their rooms fitted up as nicely as possible. Let them understand that their rooms are to be kept in order, and the result will justify your pains.

Furnish your boy with good, wholesome reading matter. Have him read to you and with you. Discuss with him what you read, and draw out his opinions and thoughts upon the subjects. Help him to think early for himself.

Make home a pleasant place; see to it that the boys don't have to go somewhere else to secure proper freedom and congenial companionship. Take time and pains to make them feel comfortable and contented, and they will not want to spend their evenings away from home.

Pick your son's associates. See to it that he has no friends that you do not know about. Take an interest in all his troubles and pleasures, and have him feel perfectly free to invite his friends to the house. Take a little pains to make him and his friends comfortable and happy in his own home. He will not be slow to appreciate your kindness.—*Mother's Companion.*

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i

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[For Lenses see Special List.]

1-11x14 Portrait Camera, with 8x10 attachment,	\$60 00
1-8x10 D. S. B. Portrait Camera,	15 00
1-8x10 D. S. B. Portrait Camera, with Benster Holder,	25 00
1-14x17 D. S. B. Portrait Camera,	40 00
1-5x7 Victoria Camera, 4 1/4-lens- ses,	18 00
1-5x7 Victoria Camera,	8 00
1-5x7 Victoria Camera,	9 00
1-5x8 Stamp Camera	15 00
1-5x8 Wet Plate Stereo. Camera, 3 holders,	20 00

VIEW CAMERAS.

1-6 1/2x8 1/2 S. S. View Camera, Shutter and Eagle Lenses,	\$35 00
1-5x7 Folding Poco with Berthiat Lenses and 3 holders list,	28 00
1-4x5 New Model Improved Cam- era,	\$11 90
1-8x10 View Camera and Holder, new,	16 00
1-5x8 New Model Camera,	10 00
1-8x10 Eastman Reversible Back Camera	25 00
1-6 1/2x8 1/2 Novelette Camera, new,	20 00
1-5x7 Blair Single Swing View Camera	15 00
1-6 1/2x8 1/2 American Optical Co.'s View Camera,	20 00
1-5x7 Blair Rev. Back Camera, new	25 00
1-5x8 Boston Rev. Back Camera, new	25 00
1-5x8 Eclipse Outfit,	2 00
1-5x8 '76 Camera, Holder, Tri- pod, and Case,	23 00
1-5x7 View Camera,	7 00
1-5x8 Blair Rev. Back Camera, and 4 holders,	25 00
1-6 1/2x8 1/2 View Camera, 3 hold- ers,	8 00
1-14x17 Ideal Camera, holder, tripod, Orthoscope lens and case,	100 00
Without lens,	40 00

HAND CAMERAS.

1-No. 1 Kodak,	10 00
1-A Ordinary Kodak, new,	5 00
1-5x7 Folding Kodak, new,	55 00
1-4x5 Climax Detective, new,	18 00
1-4x5 Turnover Detective, new,	15 00

1-4x5 Montauk Detective, new,	18 00
1-4x5 Hawkeye, Darlot lens, 3 holders, list \$33,	18 00

ACCESSORIES.

6-5x7 Printing Frames, each,	25
10-6 1/2x8 1/2 Printing Frames each,	35
1-10-in. Burnisher, double roll,	8 00
1-14-in. Drag Burnisher,	5 00
3 1/4x4 1/2 Washing Boxes, each, 5x7 and 5x8 Washing Boxes,	50
1-8 ft. Show Case	12 00
—Large Oak Show Frames, each	5 00
1-8x10 Knickerbocker Stand,	5 00
1-Corner Chair, Velvet, list \$20,	10 00
1-Cooper Enlarging Bromide Lantern, 8 in condenser	35 00
1-11-in. Acme Burnisher,	12 00
1-14-in. Eureka Burnisher,	18 00
1-15-in. Improved Eureka Bur- nisher	25 00
1-15-in. Acme Burnisher,	20 00
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Lot of Picture Mats. Write for particulars.	
1-14x17 Printing Frame,	1 25
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1-10x12 Adaptable Washing Box	3 00
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	3 00 and 4 00
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	6 00 and 7 00
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1-Seavey Swiss Cottage	8 00
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1-8x10 Porcelain Tray, Shallow,	41
1-8x10 Porcelain Tray, Deep,	50
1-Dana Chair, new,	6 50
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1-No. 2755 Rattan Chair, new,	6 50
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	2—4x5 Darlot R. H. Lens, each	10 00
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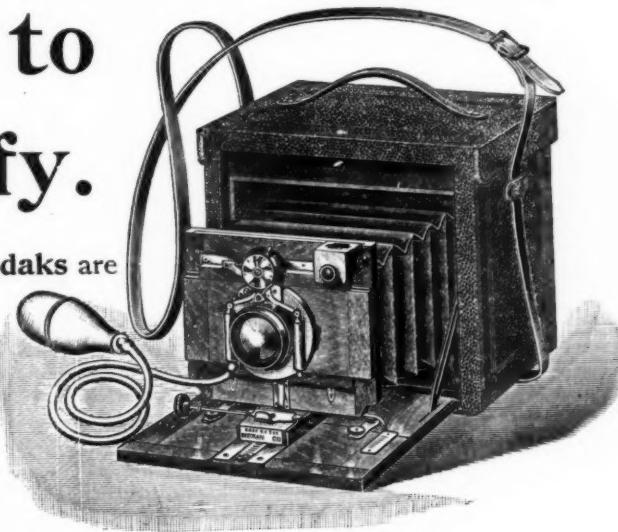
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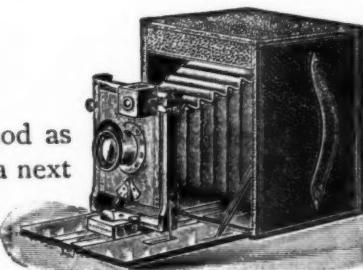
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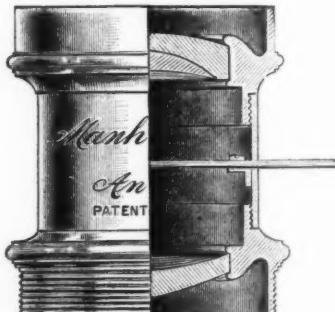
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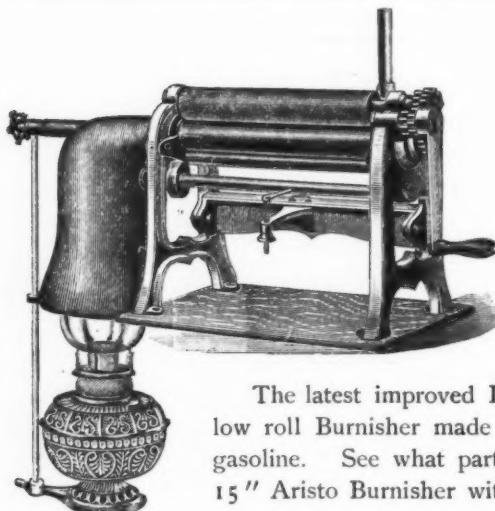
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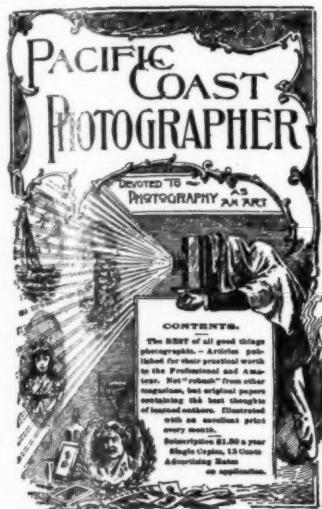
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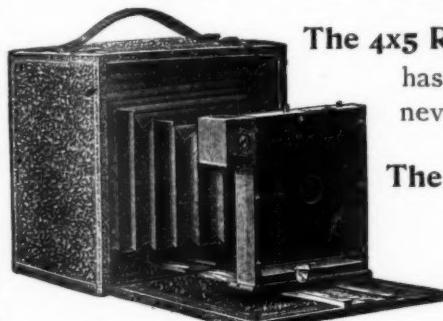
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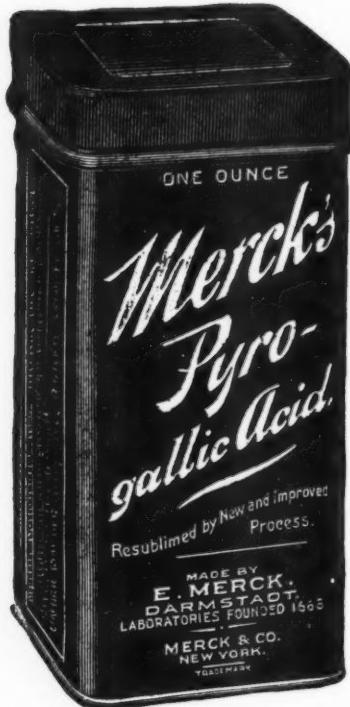
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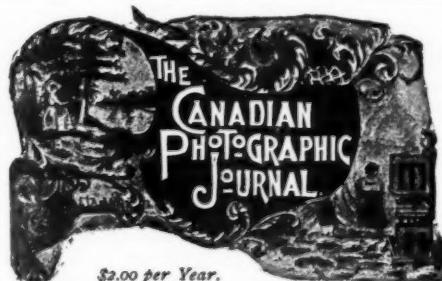
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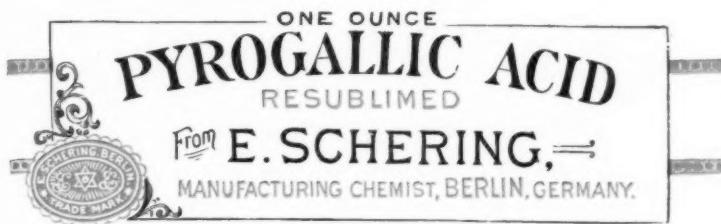
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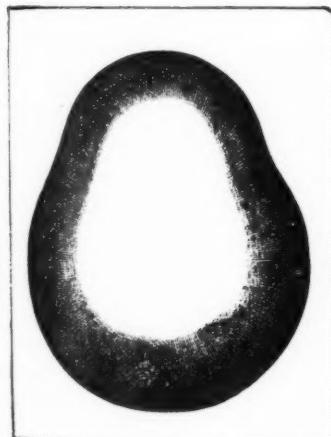
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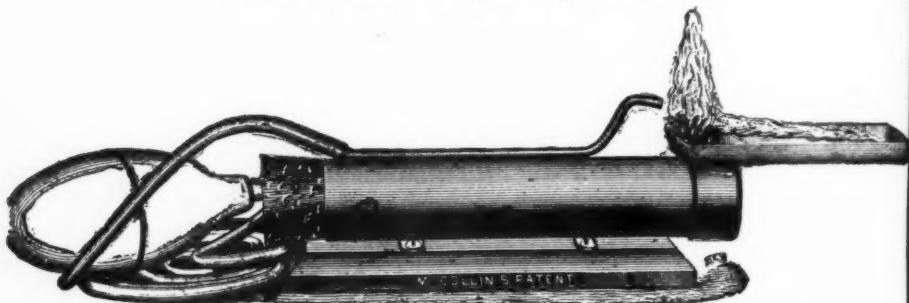
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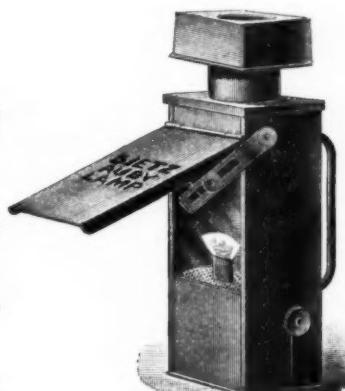
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BY BLISS & BLISS. TWENTIETH YEAR.
 Best Advertising Medium in Marshall Co.

FRANKFORT, KAN., March 8, 1895.
Mr. Ed. Mitchell, Morris, Ills.

DEAR SIR:—In reply to your request as to my opinion of the Acme Bicycles will say: I have been in the bicycle business for the past four years, and have made the bicycle somewhat of a study. I have had for my own use during that period five different wheels, and can honestly say that the Acme wheels are the best constructed, finest finished, and in general the best wheels on the market to-day for the price. I have had some dealings with the Acme people, and can say you will find them nice people to deal with, and their wheels just as represented in every particular. In short, my advice to you is buy an Acme every time.

Respectfully yours,

FRANK D. BLISS.

OFFICIAL PAPER OF DAYFIELD COUNTY.
 FRED. T. YATES, EDITOR AND MANAGER

THE WASHBURN NEWS

WASHBURN, Wis., March 8, 1895.

Acme Cycle Co., Elkhart, Ind.

DEAR SIRS:—I am in receipt of your letter of recent date, regarding advertising for this year. The wheel I got of you last year proved more than satisfactory. It received particularly hard usage but stood the test well. I now want one of your 22 pound wheels. Have you this in stock. An early answer will oblige,

Yours truly,

FRED. YATES

THE QUICK PRINT

WILCOX BROS., Props.,
 P. O. Box 505. Spokane, Wash.

March 6, 1895

Acme Cycle Co., Elkhart, Ind.

GENTLEMEN:—The wheel I bought of you last July has given me the best of service almost constantly since and has been running alongside of \$125 Rambler with less repairs and breaks of any and all kinds. However, I desire a new wheel this spring. What have you to offer?

Very truly yours,

W. B. WILCOX,
 Spokane, Wash

THE TRANSCRIPT.

Editorial Office.

A. P. HOUGH

TRAVERSE CITY, MICH., MARCH 8, '95
Acme Cycle Co., Elkhart, Ind.

DEAR SIRS:—The Light Roadster arrived yesterday, and your letter just now. Everything is entirely satisfactory, and the wheel will be paid for to-day. Electro has not arrived yet, but will be inserted in this week's issue if received to-day. If not will have to go over till next week. I appreciate your prompt and courteous treatment, and will endeavor to satisfy you as well as you have me.

Yours truly,

A. P. HOUGH.

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Embossing Machine.

Every Photographer his
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With this machine you can emboss your own mounts, either plain, or in gilt, silver or color. The manipulation is plain and easy, and will work from miniature size to 25x30.

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This machine enables you to insure this without long delay in waiting for special cards.

We will be pleased to send on application samples of the work done with this machine.

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Used with Blitz Pulver.

FOR PORTRAITS, LARGE GROUPS, INTERIORS AND STAGE EFFECTS.

Takes the place of daylight on dull days, takes the place of a skylight on bright days.

As manufacturers of Blitz Pulver, which is used by all manufacturers of Professional Flash Machines, we feel that we are in a position to know what photographers want.

We believe FLASH LIGHT WORK HAS COME TO STAY, and after careful experimentation, we have produced a lamp which combines SIMPLICITY, ECONOMY AND EFFICIENCY. We invite correspondence from photographers, and will publish from time to time samples of the work of the machine in this journal.

This machine requires no gas or gasoline,—burns alcohol,—and is used with Blitz Pulver exclusively. The cut will show its construction.

Thos. H. McCollin & Co.

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1030 ARCH STREET,

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Blitz-Pulver**Blitz-Pulver****Blitz-Pulver**

Has a record for flash-light work which is unapproached. No other powder in the United States can show the indorsements of every individual manufacturer of professional flash-lamp which are successfully on the market. Read what they say of it, and then judge. Do not deceive yourself. Flash-light work has come to stay.

ST. JOSEPH, Mo., October 6, 1894.

Thos. H. McCollin & Co.

Messrs.:—In regard to your inquiry I will say, I advise the use of "Blitz Pulver" with our machine, and I have used no other powder in getting out our sample negatives. It operates in our machine with unvarying success.

Very respectfully yours,
L. G. BIGELOW.

BRIDGEPORT, CONN., October 17, 1894.

Thos. H. McCollin & Co.

Gentlemen:—We have tried various compounds for flash light powders now on the market, but yours gives the best satisfaction with our machine.

Yours truly,
FAIRCHILD FLASH LIGHT CONCERN.

SAN FRANCISCO, CAL., February 16, 1894.

Gentlemen:—In regard to Blitz Pulver we have always recommended your powder, and our instructions call for it and no other. It is the best powder we have ever used.

[Signed] WILLIAMS & SHEPARD,
Manufacturers Williams Flash Machine.

CORTLAND, N. Y., October 8, 1894.

Thos. H. McCollin & Co., Philadelphia.

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MUSCATINE, IA., October 5, 1894.

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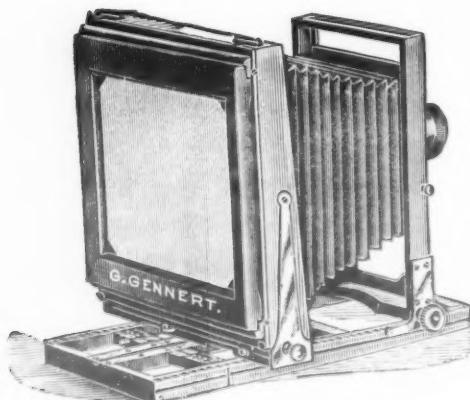
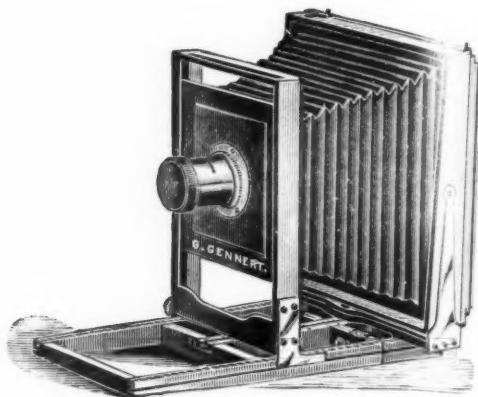
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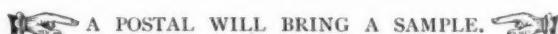
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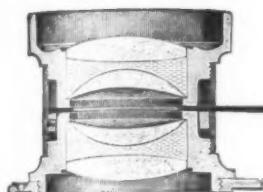
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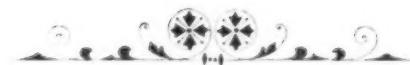
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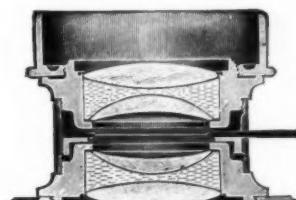
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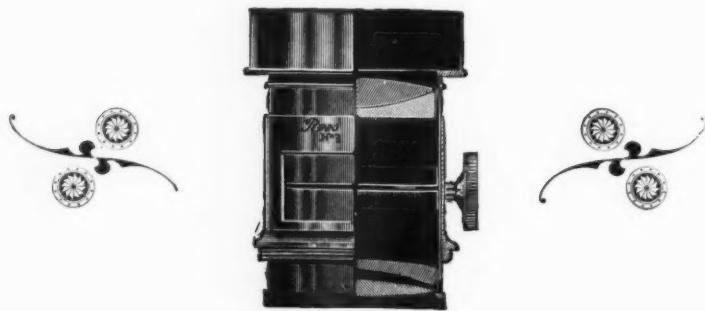
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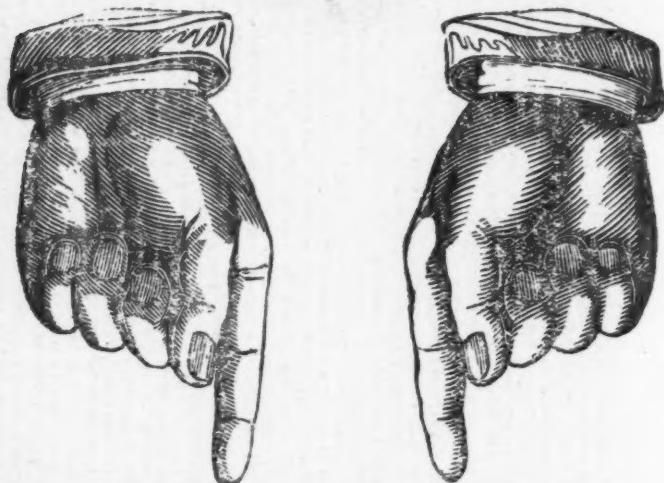
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